Industrial Equipment News

FOUNDED 1933

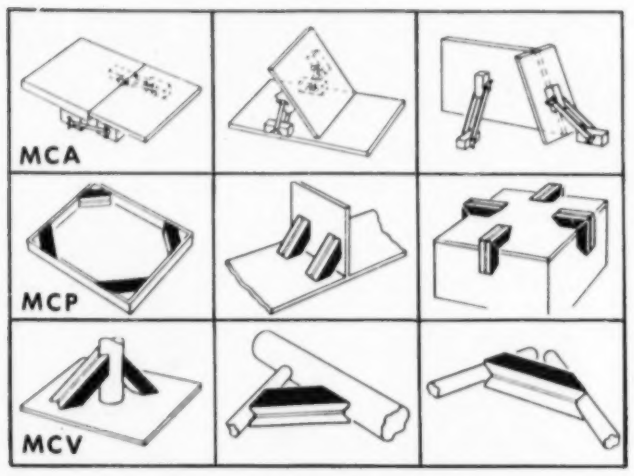
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 6081**

CLAMP . . Permanent magnet units in three types for work positioning

Source: ARONSON MACHINE CO.
453 Aronson St., Arcade, N. Y.



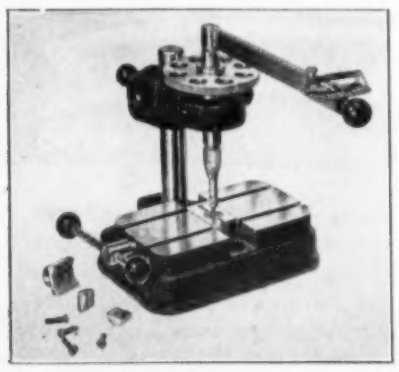
Handy to hold most everywhere

Any ferrous work can be held for welding or layout, or for check set-ups, by application of one or more of the new Twinner permanent magnetic clamps. Three types are shown in the illustration. Type MCA consists of a pair of magnetic blocks measuring 2 by 1 by 1 in. and connecting strips, either straight or curved, connected by thumb screws. Type MCP with flat surfaces and Type MCV with two V-faces complete the line. List prices are $9.50 per set for Type MCA, $14.75 each for Type MCP, $16.50 each for Type MCV.

If you write maker identify as **IEN - 6082**

TESTING . . Torsion fixture checks fastenings with torque wrench

Source: P. A. STURTEVANT CO.
118-22 E. Lake St., Addison, Ill.



Ask for Bulletin TTF-53

Model TTF ¼ with torque capacity to 200 in. lb., and Model TTF ½ with capacity to 1,800 in. lb., are available in this new torque testing fixture. Threaded fastenings and assemblies can be tested for design, inspection and production. The fixture consists of a clamping base, support column, adjustable head and a precision bearing spindle on which the user applies his own torque wrench or specifies it in the assembly.

The upper end of the spindle is fitted with a female square socket to take the torque wrench drive. The lower end carries a square male attachment in a threaded opening for a driving attachment also supplied by the user. The company can supply split threaded collets for given screw sizes and collet holders to apply between the vise jaws on the base. Special fixtures can be designed to mount in T-slots on the base to hold assemblies for test purposes.

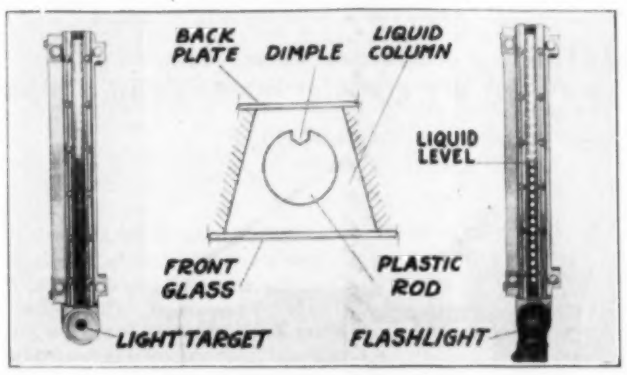
Table dimensions are 4 by 7½ in. and 6 by 12 inches. Spindle travel is ½ and ¾ inch. Throat depth is 2¼ and 4¾ inches. Maximum opening is 5 and 14½ inches.

GIVE BLOOD

If you write maker identify as **IEN - 6083**

GAGE . . Liquid level "glass" shows liquid height by column of dots

Source: NATHAN MFG. CO.
414-18 E. 106th St., New York 29, N. Y.



Patent 2514570

Glo-Rod trade names a liquid level gage originally developed for locomotive use to indicate the amount of fuel oil remaining in the supply tanks. Its ability to indicate clearly in dark locations makes it particularly suited for numbers of industrial applications for which it is now offered by the company. The indication appears as a series of bright dots in the column below the liquid level line and as dashes above this line, when a flashlight is directed at a target at one or either end. Sight lengths range from 6⅛ to 28½ inches.

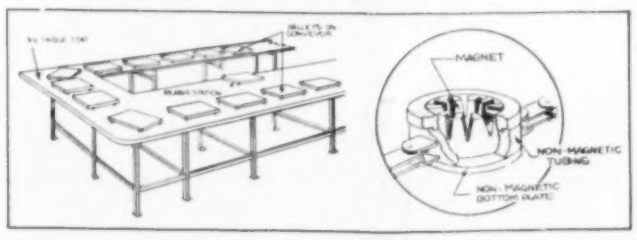
The target, shown at the bottom to the left in the illustration, surrounds the end of a lucite plastic rod. It lies horizontally at the target position and curves to stand vertically in the center of the flat sided column where it is surrounded by liquid. This rod is "dimpled" at regular intervals along its vertical length at the rear, as indicated in the center of the illustration.

The dimples are only faintly visible, as shown to the left, until a flashlight is directed at the target. Then they appear as bright dots when observed through the refraction correcting liquid, and as oval dashes above it, when the light is turned on and transmitted through the plastic rod.

If you write maker identify as **IEN - 6084**

CONVEYING . . Chain and magnets under table move caster mounted pallets

Source: GEORGE KOCH SONS INC.
2116 Pennsylvania St., Evansville 4, Ind.



For specified application

Permanent magnets are mounted at regular intervals in a motor driven chain assembly that rides in a specified closed circuit beneath a stainless steel work table in this new DeBurgh magnetic conveyor. Pallets of specified size and shape are mounted on ball type casters and also are equipped with magnets to match those in the chain. They are attracted by the chain magnets and are moved along, as these magnets move, without mechanical connection between the two.

The arrangement permits employing a continous unbroken table surface that is easy to keep clean. There is no danger to workers since the driving chain is completely out of reach. The chain and its drive can be laid out for any required circuit. The equipment is suited particularly for assembly and inspection operations on work that requires turning, up-ending and moving into new positions, with relation to its support.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

JUNE, 1953
VOL. 21 No. 6

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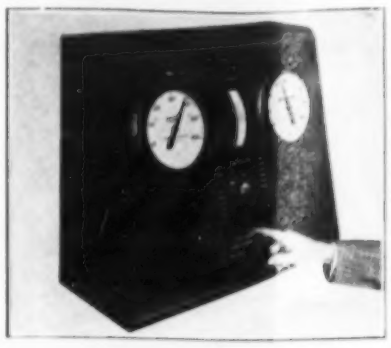
If you write maker identify as **IEN - 6085**

GAGE . . Liquid level equipment transmits readings to remote receiver

Source: SHAND & JURS CO.
2628-32 8th St., Berkeley, Calif.



Ask for Bulletin VC-353

Varioplex trade names new equipment for electric code transmission of liquid level from one or more liquid or dry granular storage tanks to a remote receiver. This receiver can be located at any distance from the tanks. Connection between the two is by an electric circuit that can be installed privately or leased from a public utility, depending upon the installation.

Transmitters, to read feet, inches and fractions, are mounted at each tank and are connected to the perforated tape on the company's standard float operated level indicator. Change in level results in angular displacement of the transmitter from a zero position to "ready" the transmitter to send a code signal.

A third transmitter located at the remote receiver sends a code signal back to the location of the tanks after a selector knob, on the receiver station, has been turned to a desired tank and a trigger lever has been depressed. Immediately following this action, the tank transmitters send a code to actuate stepping relays that move the receiver indicator dials.

If you write maker identify as **IEN - 6086**

METER . . Measures flow rate of dry granular materials in a pipe

Source: WALLACE & TIERNAN CO.
23-27 Main St., Belleville, N. J.

Compact, dustproof

Installation is in a vertical pipe line with the 5-in. openings at the top and bottom of this new Massometer. Connection for metering is to a source for 30-lb. instrument air supply and to a standard Brown pneumatic pressure recorder operating in a 3 to 15 lb. range. The 12-in. circular chart on the recorder is calibrated to read in pounds per minute. Chart speed is one revolution in 24 hours.

Downward flow of the dry material, such as grain, dry chemical, flour, impinges on a horizontal disc mounted on the shaft of a vertical motor. The resulting load on the disc tends to cause the motor housing to rotate in bearings in which the housing is mounted. This reaction is in proportion to the rate of flow and is measured by a pneumatic relay. The measurement is transmitted pneumatically to the recorder.

Flow capacity is minimum at 25 lb. and maximum at 225 lb. per minute. Accuracy is within 1 per cent in this range. The motor that drives the disc is rated at 1/20 hp. on 110-volt ac. It operates at 1,750 rpm. Overall dimensions are 26 in. in width and 24½ in. in height. Weight is 50 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6087**

It can lift 25 tons* up to 5 inches is only 10 inches high, weighs 38 lbs.

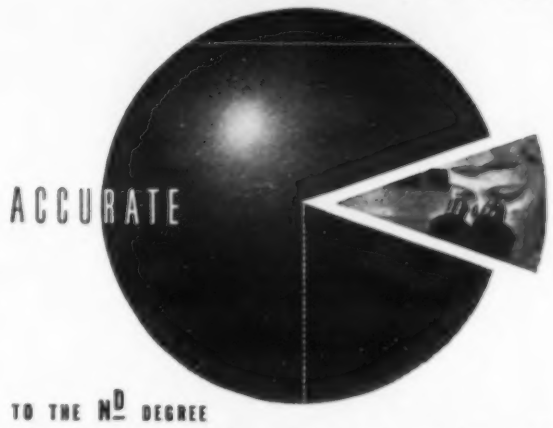
The "Mighty Mite" (No. 2510-C-2)
**other sizes handle 10 to 50 tons*

This precision made, ball-bearing journal jack is a favorite in industrial plants, construction and engineering companies, building movers, railroads and ship yards. The "Mighty Mite" is easy to carry, simple to operate, quickly raised and lowered, and is absolutely safe and dependable. It can be operated on any plane. A solid steel handle (1⅛" x 36") with pinch bar ends, which can be used as a pry bar, is furnished with each jack.

Call your distributor for complete details and information on prices and delivery or write the oldest and largest manufacturers of lifting jacks for bulletin AD12-M, The Duff-Norton Manufacturing Co., P.O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS
"Giving Industry A Lift Since 1883"

If you write maker identify as **IEN - 6088**



TO THE ND DEGREE

New Departure ball bearings are best for anti-friction work because they are made to the highest quality standards in the industry. In many instances, the diameter and roundness of the balls are held within limits of a few millionths of an inch. If an application calls for ball bearings of predetermined accuracy and life expectancy, install New Departures. Keep your eye on the BALL to be sure of your BEARINGS!

NOTHING ROLLS LIKE A BALL

Your free copy of "Why Anti-Friction Bearings" on request

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT
Also Makers of the Famous New Departure Coaster Brake

If you write maker identify as **IEN - 6089**

POWER!

For powerful protection against fire, get Kidde carbon dioxide extinguishers. Just point the horn and pull the trigger. A rolling fog of CO_2 will smother the fire instantly.

Walter Kidde & Company, Inc.
636 Main St., Belleville 9, N. J.

Kidde

If you write maker identify as **IEN - 6090**

PARADE FOR DEFENSE
...AND FOR REGULAR PRODUCTION TOO

The push of a button starts the EASY-FLO brazing parade of Navy buzzer case covers shown below and production marches on! Other Navy bell and buzzer cases and covers follow the same time-labor-cost-saving EASY-FLO low-temperature silver alloy brazing line of march.

MARCH ORDER—Posts are placed in cover with EASY-FLO wire rings around them. Heavier rings on posts touching gasket, braze posts and gasket. Assemblies are dipped in Handy Flux and travel on conveyor thru electric furnace — 1500 a day.

BULLETIN 20 *tells how to plan an EASY-FLO production parade on your metal joining. WRITE for a copy.*

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.
Distributors in Principal Cities. In Canada: Handy & Harman of Canada Ltd., Toronto

If you write maker identify as IEN - 6091

CHAMPION E-X-P-A-N-D-I-N-G MANDRELS

give speed to every set-up

The flexible sleeve, mounted on tapered arbor, expands automatically to fit the hole. Inserted by hand — no arbor press needed. Always an exact, positive, concentric fit. Locked by a single mallet blow. Unlocked the same way. CHAMPION Expanding Mandrels are used in machine shops around the world. Save time, cut production costs, whether the job calls for machining one piece or a thousand.

Precision Model has expansion range of .010". Available in regular sizes to fit holes from ½" to 3" diam. Holds work to tolerances of .0002" run-out. Guaranteed for precision grinding, turning and milling operations.

Standard Model maintains close tolerances, handles material of any length bore, hard or soft metals — from thin tubes and bushings to heavy castings and forgings. A set of fourteen will fit every hole from ½" to 9½" diam.

CHAMPION *Expanding Mandrels can be made in special shapes and sizes to fit any specifications. Quotations on request. Write for descriptive folder today.*

WESTERN TOOL & MFG. CO., INC.
Dept. 22 Springfield, Ohio

If you write maker identify as IEN - 6092

Ed Schwerske, Anaconda Inspector, checks enamel wire for smoothness.

He keeps harping...on quality

The only practical way to make magnet wire that is perfect for commercial applications is under strict quality control procedures. At Anaconda, quality is determined by statistical limits —or fences—beyond which no phase of production may stray. The narrower the control limits, the better the wire. These limits—at Anaconda—are the most exacting in the industry.

Anaconda makes a complete line of magnet wire—any type, size or shape. Your special needs will be given special attention.

Write for complete, pocketsize Catalog C-69-A. *Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.*

ANACONDA® TODAY'S HEADQUARTERS FOR MAGNET WIRE

If you write maker identify as IEN - 6093

BROWNING Roller Chain Drives

BROWNING MANUFACTURING COMPANY MAYSVILLE, KENTUCKY, U.S.A.

If you write maker identify as IEN - 6094

GRINDING . . Diamond wheel employs electroplated nickel bond

Source: OHIO METAL WORKING PRODUCTS CO.
1834-38 Euclid Ave., Cleveland 15, Ohio

Minimizes dressing

Diamond bort, graded and sorted, is held in a nickel bond by electroplating in the construction of this new diamond wheel. It has been developed particularly to sharpen carbide tools. The construction requires only one layer of diamond in each wheel and is relatively resistant to gouging and careless handling. Immediate delivery is available on a 6 by ¾ by 1½-in. wheel listing at $83 in Cleveland.

If you write maker identify as IEN - 6095

METAL . . Copper clad aluminum, excellent heat and current conductor

Source: GENERAL PLATE DIVISION
70 Forest St., Attleboro, Mass.

Conserves copper

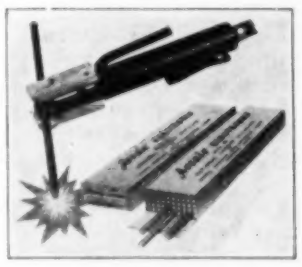
The company announces expanded production facilities for its Alcuplate copper clad aluminum in which a relatively thin layer of copper is clad on one or both sides of an aluminum sheet. The combination provides light weight, ease of soldering and plating, ability to conduct heat and electricity.

The metal is supplied in soft condition or in the usual range of cold-worked tempers. It is sufficiently malleable to permit deep drawing and forming of intricate shapes. Normal thickness ratio is 80 per cent aluminum and 20 per cent copper. Also available are 90/10 and 10/80/10. Sheet and strip are 1/16 in. or greater thickness and in width to 12½ inches.

If you write maker identify as IEN - 6096

CUTTING . . Air electric torch for use in metal cutting and scarfing

Source: ARCAIR CO.
2612-16 Burwell St., Bremerton, Wash.



Cuts, gouges any metal

The company has developed a new carbon-graphite electrode, plain or copper coated, for use with its arc cutting **torch**, previously described IEN-2191-52. Four plain electrode sizes are ¼ to ½ in. in diameter. Six copper coated sizes are 5/32 to ½ inch.

The torch connects to a source for compressed air and to a standard arc welding machine. An arc is drawn, as in welding, and the compressed air is turned on to issue through a nozzle in the torch head to blow the molten metal away.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6097

SAFETY EQUIPMENT FOR ALL INDUSTRIES

M&M RAIL CLAMPS

Used for car stops, on loading platforms, temporary sidings, cars on grades and traveling cranes.

Used and recommended by leading Steel Companies, Manufacturing Plants, Mines, Grain Elevators, Cement Plants and Quarries.

WRITE FOR BULLETIN NO. 4

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 6098

LUBRICATION ECONOMY

"LUBRIPLATE LUBRICANTS Satisfy our Requirements"

Stephens-Adamson Mfg. Co., conveyor manufacturers of Aurora, Ill. write us . . . *"We do not know of a single case of bearing trouble through faulty lubrication where LUBRIPLATE has been used!"*

1. LUBRIPLATE reduces friction and wear

2. LUBRIPLATE prevents rust and corrosion

3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N.J.—Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

If you write maker identify as IEN - 6099

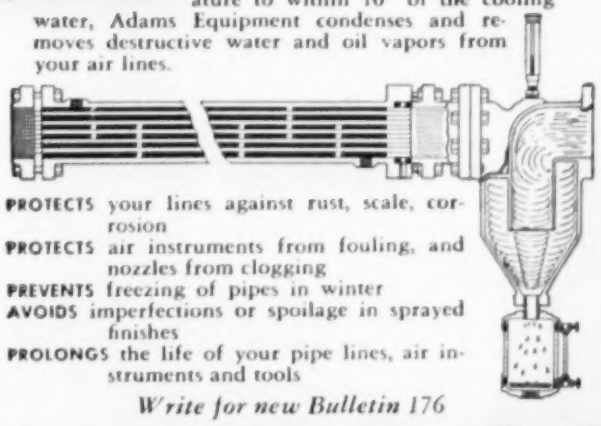
If you write maker identify as IEN - 6100

You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons
1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator...

with ADAMS Aftercooler and Cyclone Separator

● Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



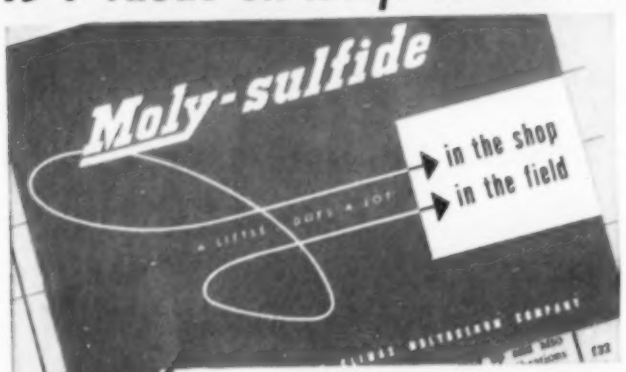
PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 6101

154 ideas on ways to use...



154 varied applications of molybdenum sulfide in the shop and in the field are described in a new booklet now available. This solid-film lubricant has demonstrated unique anti-friction properties under conditions of extreme pressure, high velocity, elevated temperature, or chemical attack.

The 40-page booklet contains the records of solved lubrication problems—some might solve your own.

Moly-sulfide
A LITTLE DOES A LOT

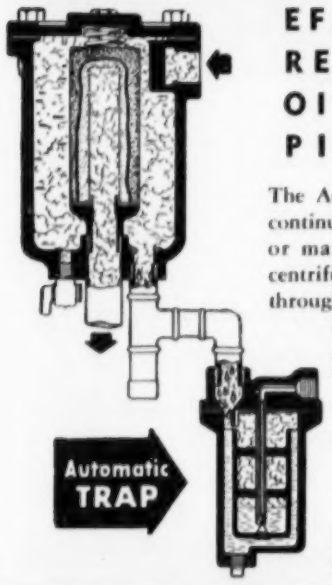
The lubricant for extreme conditions

MS-6A

Climax Molybdenum Company
500 Fifth Avenue, New York City 36, N.Y.

If you write maker identify as IEN - 6102

Poro-Stone Filtration FOR COMPRESSED AIR



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Write for complete data Bulletin 176

R. P. ADAMS CO., Inc.
219 E. Park Drive, Buffalo 17, N. Y.

ADAMS *Poro-Stone* **AIR FILTER**

If you write maker identify as IEN - 6103

Don't take chances with relief valves

No. 2668
Brass Relief Valve
Especially recommended for gasoline or noxious gases. Sizes up to 2-inch.

GET YOURS FROM CRANE

No better way to protect valuable piping and equipment against pressure build-up—than with Crane Relief Valves. They're engineered—and quality built—for dependable, positive action when properly installed for rated services.

The broad Crane line includes Relief Valves of brass, iron, steel and alloys—for steam, water, oil and other processing applications. To be absolutely sure, ask your Crane Representative or see your Crane Catalog.

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Industrial Equipment News

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VOL. 21 JUNE, 1953 No. 6

Industrial Technology

We quote little bits and pieces from a fascinating 36-page booklet, The Builders, by Du Pont. Its supporting pictures are even more fascinating. Pictures and text combine into an excellent presentation of industrial technology about which we are starting to talk but of which most of us know very little. We are picking a quotation here and there to give you a little taste—

"This is the story of the men who build, whose labors of brain and brawn have enlarged and widened our civilization. From wigwam to atom, America is the Builders' will and testament.

"No index of modern industry's growing complexity is as telling as the great variety of technical specialists needed to cope with today's needs. Design and construction of a modern plant (and, equally, its operation—ed.), requires many types of engineers, dozens of technicians, hundreds of craftsmen. There is no better expression of technical progress, no better proof that the machine has not yet replaced human brains.

"Industrial technology is nothing more than the summation of man's experience with tools and techniques. Its primary aim is simply to produce more goods at less cost, for progress comes only by increasing our total output. Mechanization, as expressed in new tools and motor power, multiples each worker's labor many times. In the U. S. such "horsepower" works out to 37 per capita, twice that of Britain and 33 times that of China or India . . . New metals reduce machine fatigue, extend 24-hour operations to more equipment. Electronics and advanced design edge U. S. industry and technology closer and closer to fully automatic controls.

"The individual employee's work-area has widened and his tools have become ever more complex and expensive. But the job has provided higher pay, shorter hours and enlarged opportunities. If this is what the new technology offers, it's the best bargain in the world.

"America's most conspicuous part in the drama of advancing technology has been in the extension of its awards to an entire population. Continuous technical and economic innovation, sponsored in quest of consumer favor in the mass market, creates the new tools, new methods, new materials which enrich U. S. life. The citizen enjoys the blessings of this cycle both as customer and producer.

"Those who forecast that machines would replace men see employment soar. Fears of a race of dulled automatons echo oddly among help-wanted ads bidding for advancing skills and know-how. Postmen, carrying dividend checks to millions of American homes, give the lie to old shrill cries about profits accumulating to the few. Wages climb even as mechanization increases. Labor costs beget labor savings, which in turn beget volume output, which leads right back to higher wages. Barring war or pestilence, many economists believe that, as our technology advances, the real buying power of the average U. S. family can, within the next 30 years, reach a point nearly twice its present level."

We suggest you write to E. I. duPont de Nemours & Company, Public Relations Department, Wilmington 98, Del., for a copy so you can read it yourself.

W. E. Irish.

If you write maker identify as IEN - 6104

HAS EVERYTHING!

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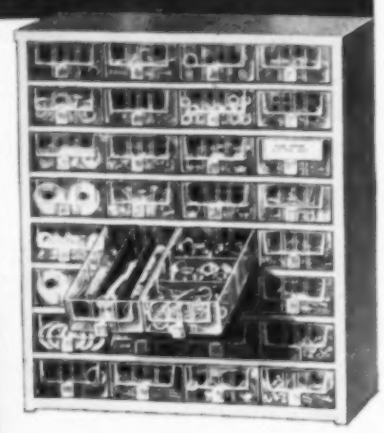
"HAZ-BIN, JR."
SUCCESSOR TO "JIFFY" CABINETS

Contents visible! Lifetime-guaranteed, crystal-clear plastic drawers, Strong all-steel cabinet has individual drawer guides. Baked-on silver-gray hammer finish. Sent complete with index cards, removable lengthwise and crosswise drawer dividers, rubber feet.

32-DRAWERS (96 compartments)
15⅜" high 6" deep 12½" wide **$12.95**



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Drawer size for all models—2-3/4" wide, 1-7/16" deep, 5-7/8" long.

Made in 9 Sizes:

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J-48	48 drawer	(144 compartments)	20.95
J-32	32 drawer	(96 compartments)	12.95
J-24	24 drawer	(72 compartments)	10.95
J-16	16 drawer	(48 compartments)	7.75
J-12	12 drawer	(36 compartments)	5.95
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SEND FOR FREE DESCRIPTIVE FOLDER

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STEPHENS-ADAMSON MFG. CO.
Standard Products Division
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Please send me Bulletin 1339 on S-A Car Pullers.
Name.....
Company.....
Address.....
City.....Zone....State.....

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SAVE UP TO 85%

WAR SURPLUS SAVINGS

STAND MAGNIFIER
Handy stand magnifier with universal adjustments. Overall height: 6". Has powerful, clear magnifying lens. **1.49**

MAGNETIC BASE-INDICATOR HOLDER . . .
A time saver for precision checking. Magnetic base fits curved or flat surface. Has 45-50 lb. pull. Stainless steel 6½" rod mounted in ball socket permits universal settings . . **3.95**
Note: We have complete line of instruments, depth gauges, inspection mirrors, etc. WRITE TODAY

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Heavy duty, G.E. Gear Head motor. 2 HP, 24V. DC, 125 amp., reversible motor drives a reduction gear unit giving 36 to 1 ratio at take-off. Also will operate on 6 or 12 volts.
36 to 1 G.E. (106 shaft RPM)
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NEW VERNIER CALIPERS
German made by one of Europe's leading specialists in precision tools. Measures inside-outside & depth in .001" to 6" in 1000ths and 1/10mm to 150mm in 10ths. **9.75**
MICROMETERS — 0" to 1" in 1,000ths. **9.75**
Has lock-nut & ratchet ...ONLY — . . .

BENDIX HYDRAULIC
PUMP & MOTOR
Has 3-1/2 GPM capacity at 600 PSI. Motor is 1½ HP, 24V, D.C. Will operate on either 12 or 32V, DC current. Has built-in relief valve adj. to 1500 PSI. This unit ideal for hyd. lifts, portable loaders, etc. **19.50**

HYDRAULIC HAND PUMP
Operating pressure 2000 PSI. Cap., 1.5 cu. in per complete cycle . . . **12.75**

HYDRAULIC ACCUMULATORS
A-2B FLOATING PISTON TYPE — 4"x 18" Built to stand 2,000 PSI **12.75**
A-5 VICKERS — 10" dia. Ball type. Built to stand 2000 P.S.I. **24.75**

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IN-6
LOS ANGELES 58, CALIF.

Order from this ad. Pay by M.O. or check. P.O's. accepted from D&B firms. ½ deposit with C.O.D's.
All Prices F.O.B. Los Angeles.

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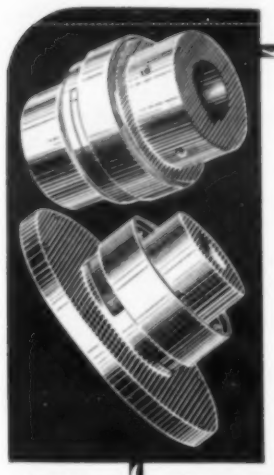

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INSURANCE
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FLEXIBLE COUPLINGS

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Also Manufacturers of Lovejoy Universal Joints and Variable Speed Transmissions

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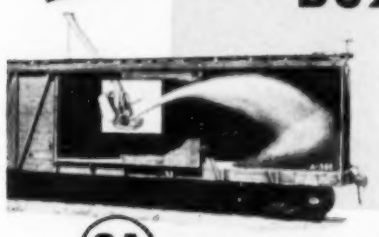
ONE Man LOADS and TRIMS Box Cars



40 to 60 T. P. H.

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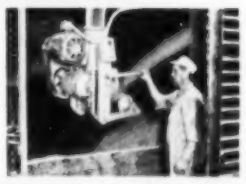
Saves time, money and labor. Powerful centrifugal thrower loads dry granular material up to 2" size into far corners of box cars. *Operator stays safely outside car.* May also be used for storage bins or piles. *Mail coupon for Bulletin 1046.*



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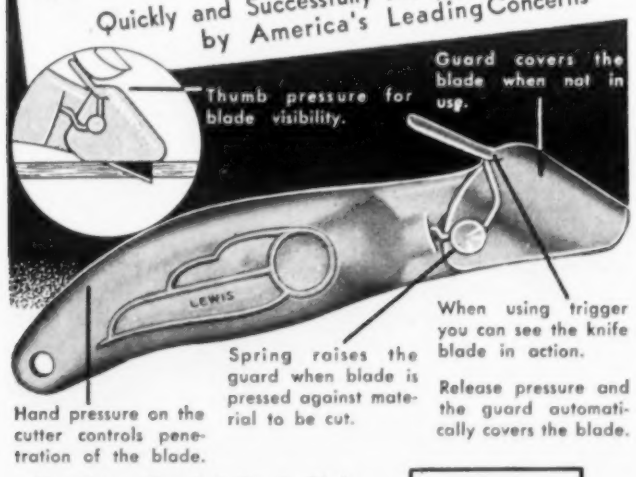
STEPHENS-ADAMSON MFG. CO.
Standard Products Division
231 RIDGEWAY AVE., AURORA, ILL.
Please send me Bulletin 1046 on S-A SWIVEL-LOADERS.
Name.....
Company.....
Address.....
City.....Zone....State.....

If you write maker identify as IEN - 6109

NEW! LEWIS AUTOMATIC TRIGGER ACTION SAFETY KNIFE

Quickly and Successfully Adopted for Use by America's Leading Concerns



No other cutting tool like it. Eliminates the hazards of exposed cutting blades. You must operate it to appreciate its swift and sharp cutting . . . always automatically ready for use. Trigger action gives full blade visibility with safety.

Retail Price $1.50

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

If you write maker identify as IEN - 6110

SIGNALING . . Graphic panel unit lights to indicate process conditions

Source: RUSSELL & STOLL CO.
125 Barclay St., 11th Floor, New York 7, N. Y.

Data Sheet 2125334P

Monolarm is a new signal alarm designed for installation in a graphic panel on which process flow lines are laid out for visual observation. The unit is available to supervise one or more abnormal conditions and to show and sound, if required, instant warning against any occurrence that is not normal.

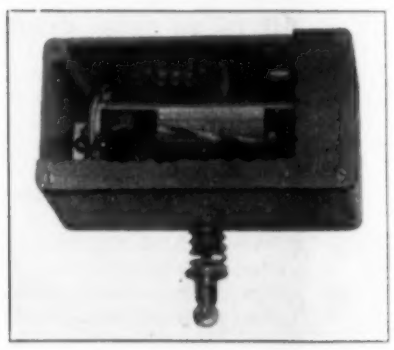
In the event of such an occurrence the "normal" light ceases to shine and the "alarm" light flashes rapidly on and off. An external howler can be specified to add its audible warning. The operator must acknowledge the signal by turning a reset switch. When he does this, the alarm light assumes a steady state until the condition is corrected. Then the signal returns automatically to its normal indication.

A single narrow bezel and button fits into a flow or graphic line diagram. The power supply cable connects at the rear and is provided with an interlocking switch receptacle and plug which cannot be withdrawn under load. The hermetically sealed plug-in relays are removable for replacement. A time delay circuit is available to compensate for turbulence and vibration prior to signal operation.

If you write maker identify as IEN - 6111

CONTROL . . Plunger potentiometer actuates electronic control equipment

Source: WARD LEONARD ELECTRIC CO.
29-33 South St., Mount Vernon, N. Y.



Action is stepless

Cutting speed can be held at a constant rate and winder drives or dancer rolls can be regulated with this new Bulletin-68 Plunger Potentiometer. **The new unit is** driven by a flat or rotary cam actuated by the cross feed on a lathe, as in a constant speed control. As the tool moves in toward center, and cutting speed tends to decrease with decreasing work diameter, the cam operated sliding contact in the mechanism changes circuit resistance to speed up the drive.

The resistance element rates a change of 10,000 ohms as the contact moves from one end to the other. This action requires ½ in. of plunger travel. Size is 8½ by 4½ by about 8 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6112

TROMBETTA SOLENOID CORP.
331 N. MILWAUKEE ST. • MILWAUKEE 2, WIS.

SB-300 LINE OF BRAKES

Sizes 2½" dia. x 1½" face to 72" dia. x 14" face, continuous rating range from 3 ft.-lbs. to 24,000 ft.-lbs.

8 SPECIAL FEATURES

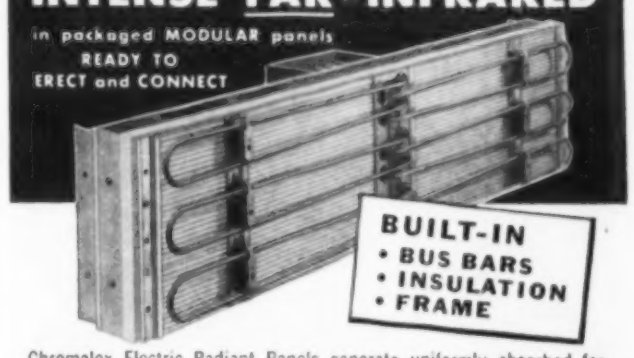
(1) Operated by long stroke, high power large capacity solenoids. (2) Only 50% of solenoid stroke is used to release the brake. The extra 50% is reserve to take care of lining wear. (3) They can be used for stopping as well as for holding loaded motors. (4) In double solenoid type, one solenoid operates the brake and the other is a spare assuring uninterrupted operation. (5) They are available for all voltages and frequencies alternating current. (6) Also for all voltages direct current series or shunt connections. (7) In shunt operation no series resistances, no discharging resistances are necessary. (8) They are available with oil immersed and explosion proof solenoids.

NINE LINES OF SOLENOIDS, RECIPROMOTORS AND SEMOTORS

See McGraw Hill's Prefiled Electrical Catalogs. Write for Additional Information.

If you write maker identify as IEN - 6113

NOW CHROMALOX GIVES YOU
INTENSE FAR-INFRARED
in packaged MODULAR panels
READY TO ERECT and CONNECT



Chromalox Electric Radiant Panels generate uniformly absorbed far-infrared heat for baking, drying, curing and other uses. Temperatures up to 700° F. are easily selected and accurately held with "dialed" controls.

THESE ADVANTAGES—AND MORE!

- **Longer Wave Length**—absorbed equally fast by all colors.
- **High Intensity Radiation**—more watts per square foot.
- **Infinitely Variable Output**—from 0% to 100% of capacity.
- **Shatter-proof Construction**—nothing to break or contaminate work.

GET THIS BULLETIN →

It shows you how Chromalox Radiant Panels can save you time, money, work.

OVEN BUILDING SIMPLE AS A-B-C
1' x 4' and 2' x 4' pre-engineered panels quickly assemble into ovens.

Industrial Radiant Heating Division IB-27
EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Electric Heaters Advertisement, Page 11
CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 6114

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

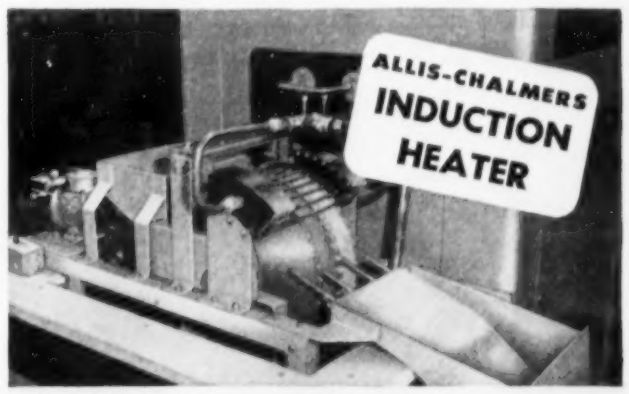
Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

WIRE MARKERS
PIPE MARKERS
SAFETY SIGNS
PRINTED ROLL TAPE
MASKS & STENCILS

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
743 W. GLENDALE AVE., MILWAUKEE 12, WIS.

If you write maker identify as IEN - 6115



Hardens Both Ends of 3600 Lifter Rods Per Hour

Get high production like this with an Allis-Chalmers induction heater. In this application push rods are picked up from a hopper by a rotating wheel, conveyed through the coil, heated at both ends simultaneously, then oil spray quenched and deposited in a bin.

This same heater can be used for brazing, soldering, annealing, as well as case and through hardening.

High production, plus versatility, plus low operating cost make the Allis-Chalmers induction heater an important time and money saver. Find out what it can do for you. Call your nearby Allis-Chalmers district office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3976

ALLIS-CHALMERS

If you write maker identify as **IEN - 6116**

Warehouse installation of wheel and roller straight sections and curve feeding from three directions through FLEX-A-SWITCH onto portable belt "POWER HELPER" for delivery to higher level loading floor. Metzgar conveyors are ideal for production line and warehouse handling.

• SALES OFFICES IN PRINCIPAL CITIES

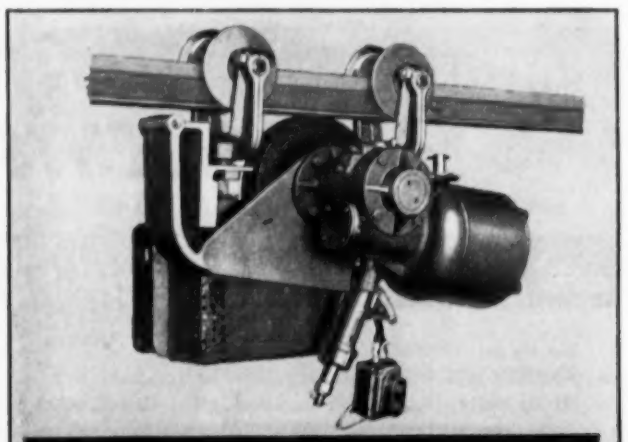
METZGAR CO.

MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES

417 Douglas, N. W.

GRAND RAPIDS 4, MICH.

If you write maker identify as **IEN - 6117**



A NEW Light-Duty MONOTRACTOR

For the propulsion of ordinary loads on standard MonoRail track—not exceeding 1-ton capacity—this MonoTractor offers the advantage of direct, right-angle motor drive through a 2½" x 8" rubber wheel. This unit is being produced in quantity with standard specifications covering push-button control for either the drive unit alone or combined with electric hoist operation.

SEND FOR BULLETIN AD-1

THE AMERICAN MONORAIL COMPANY

13111 Athens Avenue • Cleveland 7, Ohio

If you write maker identify as **IEN - 6118**

SHIPPED TO YOU

What are your current needs in roller conveyor? **FROM STOCK**

Logan Stock Roller Conveyor is offered in several sizes for average duty conveying. Roller spacing 4" or 6" centers. Roller lengths of 12", 16" and 20". Capacity 75 lbs. per ft. with supports on 10'0" centers and 380 lbs. per foot with supports on 5'0" centers. Both stationary and portable supports available. USE THE COUPON.

Logan CONVEYORS

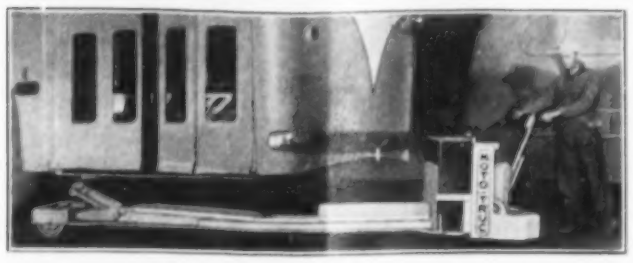
LOGAN CO., 276 Cabel St. LOUISVILLE, KY.

LOGAN CO., LOUISVILLE, KY.
☐ Send literature on Stock Conveyors
Mr. _____
Firm _____
Address _____

If you write maker identify as **IEN - 6119**

JACK . . Mobile hydraulic unit, power drive to service buses, trucks

Source: MOTO-TRUC CO.
1987 E. 59th St., Cleveland 3, Ohio



You name the length

V-Mover is a new battery powered truck type jack that will reach in under a bus or motor truck and lift it for movement from one location to another. Lift capacity is to 25,000 pounds. Length of the unit is subject to specification. The battery is an 18-volt unit. Controls provide for two speeds in forward and reverse directions as standard.

If you write maker identify as **IEN - 6120**

CLEANING . . Stripping solvents for alkaline resistant paint, lacquer

Source: OAKITE PRODUCTS INC.
116-A Rector St., New York 6, N. Y.

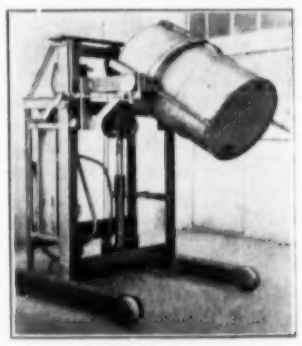
Service report upon request

Composition 56, a thin-bodied solvent, and Compound 57 a viscous fluid, are two new paint strippers for immersion and brush application. Both can be employed to remove paint and lacquer from a metal surface. Some paints will wrinkle and rinse off, following the application, other can be scraped or brushed off after they have been softened by the solvent action. The compositions are non-flammable. They do not contain phenols, cresols, acids or alkalis.

If you write maker identify as **IEN - 6121**

ELEVATOR . . Portable assembly to lift and tilt filled steel drums

Source: WEST BEND EQUIPMENT CORP.
218-22 S. Water St., West Bend, Wis.

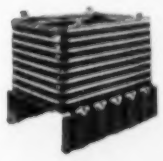


A Weld-Bilt unit

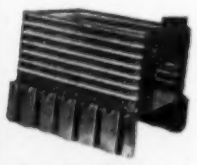
The contents of a steel drum can be dispensed under safe control when it is secured in, lifted and tilted with this new portable elevator. The worm driven tilting action holds securely in any position. The lifting mechanism can be specified for hand or power operation. Mounting is on wheels at the ends of the straddle type legs and on a caster type steering wheel with a jack arrangement that lets solid feet down to the floor to hold in set position. Load capacity and lift height can be specified to meet given requirements.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6122**



Type PB-120T box and platform with tiering lugs.

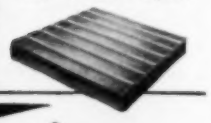


Type PB-650 box and platform unit with sliding end door.

Specify this NEW name for the ones proven best in STEEL BOXES and SKIDS

Type PB-120L box and platform unit with full-length lifting lugs.

Double-Face Steel Pallets — rigidity and strength with minimum weight; no sharp edges; three styles.



Republic

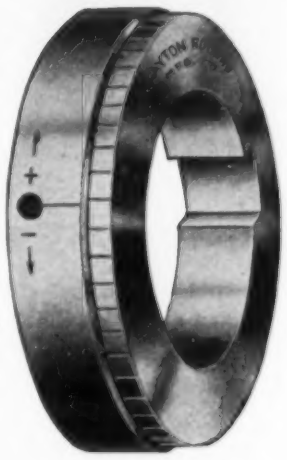
Throughout industry, these quality boxes and skids have been known and preferred for their outstanding ability to carry the load and keep things moving. Now, they come to you as "Republic" brand products—exactly the same in everything but name. Remember this name "Republic" when you want the best in steel boxes and skids for every purpose. Write for free illustrated catalog of the complete "Republic" line.

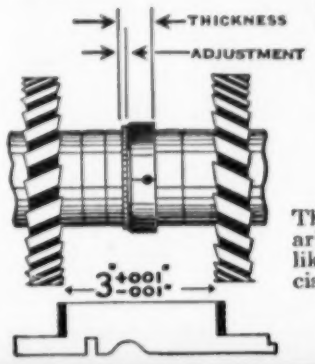
PRESSED STEEL DIVISION
REPUBLIC STEEL CORPORATION
6200 TRUSCON AVE. • CLEVELAND 27, OHIO

If you write maker identify as **IEN - 6123**

SAVE TIME on GANG MILLING SET-UPS

Dayton Rogers *hardened and ground,* adjustable micrometer spacing collars are considered the last word on all types of milling machine set-ups for gang milling, straddle milling and similar operations. They are quickly and easily adjusted to the plus or minus positive adjustment. The collar is so designed that it gives the minimum over-all thickness with the maximum adjustment, graduated in .001".





They are stocked for cutter arbors from ⅝" to 2". You'll like the speed, the precision, and the time saved!

Write Today For More Information!

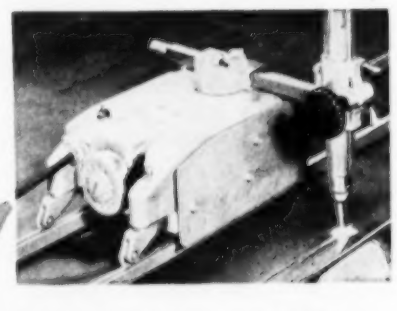
DAYTON ROGERS *Manufacturing Company*

2836 13th AVE. S
MINNEAPOLIS, MINNESOTA

If you write maker identify as **IEN - 6124**

SAVE TIME AND MONEY with this

OXWELD Trade-Mark **MACHINE CARRIAGE**



Here is a new lightweight machine carriage—the OXWELD CM-45—that will mechanize literally dozens of oxy-acetylene jobs in large or small metalworking shops, and do them better than the most skilled hands.

You save money when you let the CM-45 do your cutting, beveling, flame-treating, or special welding jobs. Its efficient operation saves oxygen and acetylene as well as time, and rejects are reduced to a minimum.

For further information, call your nearest LINDE representative today. Ask for a free copy of Form 7839. No obligation.

LINDE AIR PRODUCTS COMPANY
A Division of Union Carbide and Carbon Corporation
30 E. 42nd St., New York 17, N. Y. Offices in Other Principal Cities
In Canada: Dominion Oxygen Company, Limited, Toronto

"Oxweld" is a trade-mark of Union Carbide and Carbon Corporation.

MORE SPEED — MORE SUPPORT

PADDOCK BAND-SAW GUIDE

Model 20 (note cut-away exposing upper wheel) holds blade securely at three points. The V-shaped groove in the thrust wheel holds the back of the blade—the two front wheels hold the sides of the blade.

Wheels are inter-changeable—ball bearing. Model 20 is installed above or below saw table. Gives greater ease, better adjustment for the thrust wheel for blades ⅛ to 1" wide. Provides the greatest possible support to the blade—friction free—wheels run in same direction as blade.

Write for information today.

Give size, make of machines on which guides will be used.

PADDOCK TOOL CO.

Guide Makers Since 1920

1418 Walnut Street Kansas City 6, Mo.

Paddock BALL-BEARING **BAND SAW GUIDES**

If you write maker identify as IEN-6126

TAL PORTABLE BENDERS — Complete ALL Piping Jobs FASTER

SAVE ON

- Number of Fittings
- Elbows & Couplings
- Cutting, Threading
- Overall Costs

Install pipe and conduit *faster* at *lower cost* by reducing up to 80% the number of fittings or elbows and couplings otherwise needed. Save on cutting and threading. You can wth a Tal, because Tal Portable Benders make any degree bend up to 180° in A *SINGLE* OPERATION WITHOUT SHIFTING THE PIPE.

No guesswork for offsets, long sweeps or any other bends. No experience necessary to make accurate, wrinkle-free bends right on the job. *No spoilage.* Bend indicator assures identical repeat bends without measuring. Learn today how you can earn more money and handle more jobs with a Tal Bender.

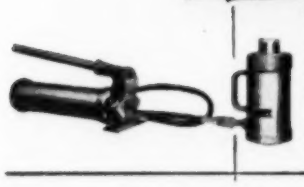
COMPLETE LINE OF BENDERS
For pipe up to *8 inch.*
For copper and thinwall tubing.
6-Way Hickeys — lifetime guarantee.

WRITE FOR THIS FREE BULLETIN

Tal Bender, Inc. Dept. 2 Milwaukee 2, Wis.

If you write maker identify as IEN-6127

Re-Mo-Trol PULLERS
Hydraulic Pumps and remote-controlled Rams for pulling wheels, gears, shafts, etc.; also pushing and lifting in any direction *from a distance.* Safe, smooth, powerful. 10 to 100 ton capacity units. Unique Center-Hole simplifies rigging.



SIMPLEX JENNY
Self-contained Hydraulic Pullers with famous Center-Hole for easy pulling, pushing, lifting. Rugged, versatile; 6 models, 30 to 100 ton capacities.

SIMPLEX HYDRAULIC JACKS
Sturdy, safe, efficient units to do any lifting job easy and fast. 8 models; 3 to 100 ton capacities. Also 10 and 25 ton models with toe lifts.

Get full information on the most complete industrial line of Hydraulic Jacking equipment; write for Bulletin: 53.

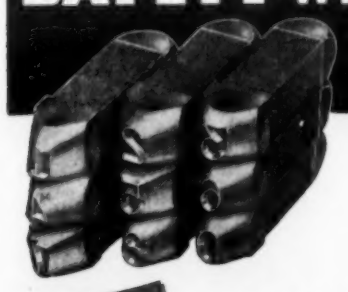
Simplex LEVER · SCREW · HYDRAULIC Jacks

TEMPLETON, KENLY & CO.
1012 So. Central Avenue, Chicago 44, Ill.

If you write maker identify as IEN-6128

WANT MORE EFFICIENT— LONGER LASTING STEEL STAMPS?

USE "SAFETY" WEDGE GRIP LETTERS and FIGURES



- No Spall
- No Mushroom
- More Service
- Knurled Grip
- Patented under No. 2,089,794
- Thumb Side Markings

Write for Catalog 100

Knurled sides for positive grip—patented design provides perfect balance and deeper impressions. Especially recommended for toughest jobs on steel castings, cylinders, tool steel, etc. All sizes available 1/16" to 1" characters.

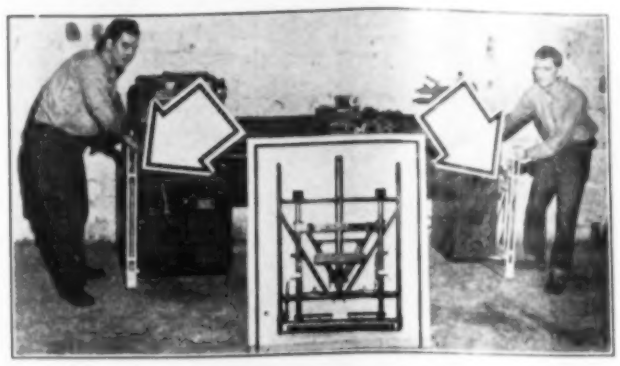
Mecco SAFETY MARKING TOOLS

M.E.CUNNINGHAM CO.
1039 CHATEAU STREET, PITTSBURGH 33, PA.

If you write maker identify as IEN-6129

TRUCK . . Roll mounted hand lift applies in pairs for load handling

Source: BROWN-LINE CORP.
339-43 N. Foothill Road, Beverly Hills, Calif.



Hand hydraulic elevation action

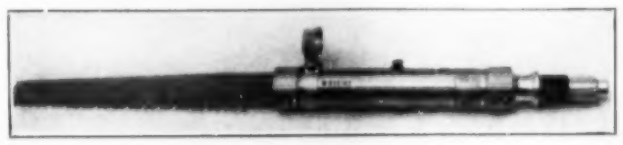
Tubular frame is mounted on a special design of roller assembly in this new Palevator load handling truck. Two of the units apply at the two ends of a load to pick it up on fingers that are rotated into carrying position and that are lifted and lowered by operating a centrally located vertical hydraulic pump piston.

The roller assembly consists of a single long roll, on which the unit moves broad side, and a line of small rolls, inside the large one. They can be turned to face downward for sidewise movement. The large roll is locked by a pin provided for this purpose for the latter movement. Two sizes rate 2,500 and 6,000 lb. per pair. Prices start at $325 per pair.

If you write maker identify as IEN-6130

WOODWORKING . . Pneumatic saw reciprocates two balancing blades

Source: WRIGHT POWER SAW & TOOL CORP.
288 Longbrook Ave., Stratford, Conn.



Operates in any position

Sabre trade names new blade design for the double blade "kick free" pneumatic saw, previously described IEN-2143-51. Face bevel on the teeth is flat so the saw can be sharpened without removing it from the housing. There are no angles to watch and no tooth gage required. The blade can be "touched up" by an unskilled worker with an ordinary file. The hard chromium plated deposit on the blade faces lies on both sides of the softer steel on the face of the tooth. As a result the tooth wears away faster than the edges to produce a semi-self-sharpening action.

The twin blades operate side by side through a 4-in. stroke at 1,500 strokes per min., as in the original design. This opposing action eliminates any "kick" on going through the work or coming out of the cut. The blades measure 21 in. in length and are suited for cross-cutting, ripping or notching. Sawdust is moved away from the operator and will not clog or bind the blade. The saw weighs 14½ pounds. It will cut timbers to 21 in. in width. Operation is on air pressure at 70 to 100 pounds. Air consumption is about 60 cfm. at 90 pounds. The kerf measures 3/16 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-6131

Do you use barrier wraps?
Then you need the new

DERBY BW BARRIER WRAP MEASURING DISPENSERS

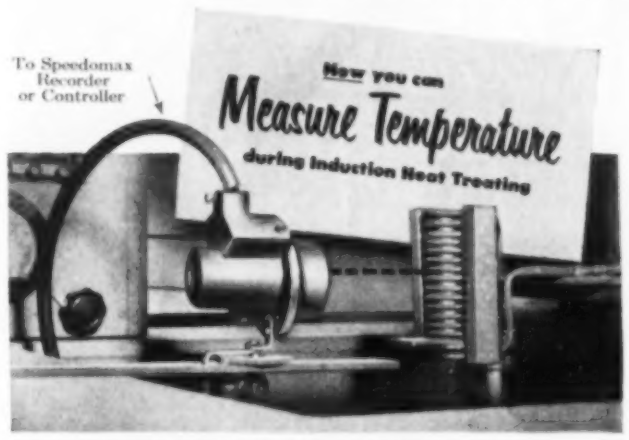
The Derby BW Dispensers eliminate the slow, messy, expensive Barrier Wrap handling problem and provide a substantial saving in time, labor and material. Large rolls may be converted into the exact widths and lengths desired in one single operation.

Available in models to accommodate 4", 6", 8", 12" and 14" rolls and equipped with Universal Slitter to deliver a variety of desired widths and definite lengths.

For further information write Dept. IF

DERBY SEALERS, INC. DERBY, CONNECTICUT

If you write maker identify as IEN-6132



This Rayotube detector is sighting on the work between coils of the heating unit.

• Mounted only 4 inches from an induction heating coil, this new small target Rayotube detector can focus on an opening as small as 0.1 inch between turns of the coil, and through this opening sight on the hot surface of the work.

Teamed with a Speedomax instrument it enables you automatically to measure, record and—if desired—control work temperature during the entire heating cycle.

If you'd like more details just write us at 4905 Stenton Avenue, Philadelphia 44, Pa.

Jrl. Ad. NS8(1)

LEEDS & NORTHRUP instruments · automatic controls · furnaces

If you write maker identify as IEN-6133

WANT A BETTER CHAIN?

FOR DRIVES
FOR CONVEYORS

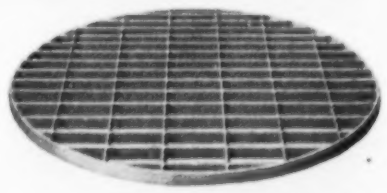
This new booklet presents the complete story of the new Rex R, RX and RR series Chabelco® Drive and Conveyor Chains. It explains how these improved chains can give *you* more for your chain dollar. Send for your copy of Bulletin 53-59 today!

REX® CHAIN BELT COMPANY OF MILWAUKEE

CHAIN BELT COMPANY 53-108
4675 W. Greenfield Ave.
Milwaukee 1, Wis.
Gentlemen:
Please send me Bulletin 53-59.
Name.....
Company.....Dept.....
Address.....
City.....State.....

If you write maker identify as IEN-6134

REMOVE THE DANGER OF OPEN AREAS



Here's the Solution!

Blaw-Knox Electroforged Steel Grating is the ideal "coverage" for unprotected pits, light wells, basement stairways and other hazardous open areas. It is a one-piece steel "material" that provides safe footing under any conditions, and admits the maximum of light and air. *Strong . . . Silent . . . Secure.* Thousands of installations are still on the job after 20 years of traffic!

Send us dimensional sketch
We will then forward you price on grating cut to exact size. No nuts, no bolts, no special tools required. Don't delay . . . write today and make those danger spots both safe and usable!

BLAW-KNOX COMPANY
Grating Department
BLAW-KNOX EQUIPMENT DIVISION
2050 Farmers Bank Bldg.
Pittsburgh 22, Pa.

ELECTROFORGED® STEEL

BLAW-KNOX GRATING

If you write maker identify as IEN - 6135

Stop torsional strain with Eastman ADAPTER UNIONS

Eastman Design and Engineering Guarantees Tight Fit . . . Easy Action

- **Eastman Adapter Unions** prevent twisting and assure proper positioning of hose lines when being installed. Accurate machining assures leakproof metal-to-metal seat as effective as a ground joint union.
- **Eastman Angled Adapter Unions** eliminate the use of elbows and pipe unions, thereby reducing the number of threaded connections. Original Eastman design provides tight-fitting joint at any pressure.
- **Eastman, "First in the Field of Hydraulic Hose Assemblies,"** stands for the highest quality of material and workmanship—your best assurance of satisfactory service.

"Safeguarding Industry's Lifelines of Mobile Power"

EASTMAN MANUFACTURING CO.
Since 1914
Dept. IEN6, Manitowoc, Wisconsin

Straight and Angled Adapter Unions

Eastman *first in the field*
HYDRAULIC HOSE ASSEMBLIES

Send for Eastman Form No. 231-B, 232-B for sizes, angles available.

If you write maker identify as IEN - 6136

2-TON CAPACITY INDUSTRIAL TRAILER

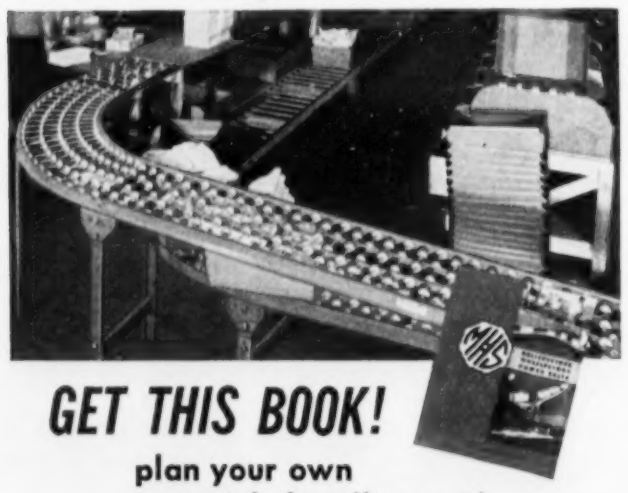
FOR TRACTOR-TRAILER OPERATION

If you are looking for a rugged, easy-running trailer, the THOMAS "General" is the trailer for you. A choice of 5 platform sizes that can be "Job-Suited" with superstructures to carry your loads more efficiently and economically. Available with steel or rubber-tired wheels, with Hyatt roller bearings and automatic or manual couplers. Before you buy an Industrial Trailer find out how THOMAS can increase your production and lower your handling costs.

THOMAS TRUCK AND CASTER COMPANY
305 Mississippi River
KEOKUK, IOWA

Send for Free Literature

If you write maker identify as IEN - 6137



GET THIS BOOK!

plan your own materials handling with

MHS Standard Units

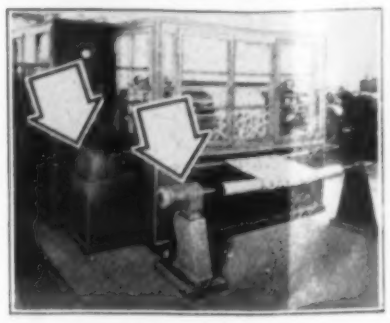
Here's a real, practical aid in your materials handling problems. All types of MHS high-quality, standard conveyors, ready to help you cut costs, save time and labor. Write today for free illustrated catalog and data book, PE-G1.

Mechanical Handling *Systems, Inc.*
4605 NANCY AVE. • DETROIT 12, MICH.
OFFICES IN PRINCIPAL CITIES
In Canada—Mechanical Handling Systems, Ltd., Toronto

If you write maker identify as IEN - 6138

DRIVE . . Variable speed equipment holds tension constant in winding work

Source: HOBBS MFG. CO.
46 Salisbury St., Dept. 8, Worcester 5, Mass.



Made in Europe

Preset tension is sensed electrically and is transmitted to a variable speed driving motor mounted on the winding shaft in this new Alquist winder. The equipment is available to handle a range of materials in both wire and sheet form. It is sufficiently sensitive to handle thin foils, plastics and small wires as well as the heavier and stronger materials. A typical installation is shown in the illustration on a textile drying machine.

The motor mounts directly on the shaft of the winder that receives the material as it comes from the machine or process. Control is centered in a housing in convenient location.

If you write maker identify as IEN - 6139

CLEANING . . Liquid material dissolves dyes, waxes, resins, grease

Source: CHARLOTTE CHEMICAL LABORATORIES INC.
1120-24 Southern Blvd., Charlotte, N. C.

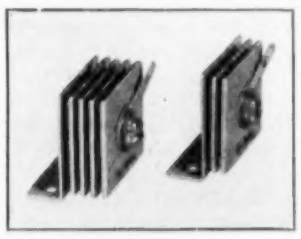
19 cents per pound

Charlab roller cleaner is a new brown colored liquid to wipe, spray, brush on rollers, dry cans, equipment in dyeing and finishing plants. The liquid is allowed to remain for a few minutes, then it is flushed off with cold water. It is safe to use on rubber and composition rolls. It will remove oils and greases from shafts, bearings, printing blankets, floors. It is non-toxic, non-caustic. Packaging is in 460-lb. drums.

If you write maker identify as IEN - 6140

CONTROL . . Selenium unit for use as a dc. low voltage regulator

Source: INTERNATIONAL RECTIFIER CORP.
1519-23 E. Grand Ave., El Segundo, Calif.



Carried in stock

This new unit consists of specially processed selenium plates connected in series on a mounting bracket. Application is in shunt connection with a load and a voltage dropping resistor, the latter in series with the source voltage and the load. Regulation is accomplished by employing the forward characteristic. Voltage across the resistor varies inversely with the changing load current in the circuit.

Three assemblies are available with ratings at 1½, 2 and 3-volt dc. respectively. Higher voltages can be specified in which case additional plates are added to the basic element.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6141

STONEHOUSE SIGNS FOR ACCIDENT PREVENTION

SAFETY IS NO ACCIDENT

Now, more than ever, the safeguarding of industrial workers is vital to maximum production. Every accident slows up operations.

Stonehouse Accident Prevention Signs cover every conceivable hazard. Hundreds of stock-worded signs are ready for prompt shipment. • Special wordings also produced to your specifications.

Our complete Catalog No. 9, in full color, is free on request.

Stonehouse SIGNS, inc. MANUFACTURERS
Stonehouse Building • 842 Larimer
Denver 4 Colorado
"Signs Since 1863"

ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS

If you write maker identify as IEN - 6142

For Catch Weights in Industrial Weighing . . .

THERE IS NO SUBSTITUTE FOR EXACT WEIGHT

Industry generally has wide uses for weighing units for unknown or catch-weighing. EXACT WEIGHT Scales meet this demand with a complete line of automatic fan dial scales with five types and twenty-three models, in capacities from 1 lb. to 40 lbs. Equipment is available in both metric and avoirdupois. These scales are manufactured to the same high standards of all EXACT WEIGHT Scales to give you greater accuracy, dependability and long service. Units are highly flexible and adaptable to many varied applications. New literature giving full specifications as to weighing capacity, dial markings, type of commodity holders and beams is yours for asking. Write today!

EXACT WEIGHT SCALES

BETTER QUALITY CONTROL
BETTER COST CONTROL

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as IEN - 6143

Overhead work's a SNAP! with the NEW Ladscaf SCAFFOLDING

No Bolting with Ladscaf 'LOCK-ON' CLAMPS

It's a snap to erect Ladscaf with these new positive-action clamps. Will not disengage until trigger is released.

UP FASTER

Quickly clamps together to build *better* scaffold *faster*. Ladder rungs are spaced just a foot apart.

SWIVEL ACTION

Stabilizers swivel back to move scaffold easily thru narrow aisles.

UP STAIRS

Ladscaf 'climbs' stairs easily—reduces blocking to a minimum. 2-foot wide panels permit convenient passage around scaffold.

Write for informative, New Ladscaf Bulletin IE-6.

IT'S A SNAP TO SAVE

Call on Universal's layout and planning service to help you

on all Maintenance Painting and Decorating Problems

UNIVERSAL SCAFFOLDING

Ladscaf low-cost, welded steel ladder panels, eliminate bolting—are quickly erected with exclusive snap-on' clamps. Easily fits in confined areas—can be rolled on casters—and extended to straddle machinery.

Combine New Ladscaf with famous Universal Ezebilt steel-panels and Endlok pipe-and-clamp for difficult and unusual scaffolding jobs.

UNIVERSAL MANUFACTURING CORP. ZELIENOPLE, PA.

Distributors offer fast help and service. Consult your classified phone directory.

If you write maker identify as IEN - 6145

Make Stronger Fastenings this easy way

Hardened

Masonry Nails

DRIVE EASILY into mortar, cinder blocks, and other soft masonry without pilot holes . . . into pre-drilled holes in harder materials.

HARDNESS and TOUGHNESS perfectly balanced . . . they drive in straight to stay tight, even under shock or vibration.

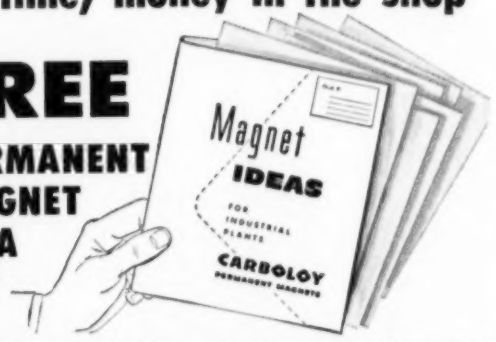
COST YOU LESS and are much simpler to use than plugs, expansion bolts, other devices. Samples free . . . try them. Ask your P-K Distributor, or write: Parker-Kalon Corporation, 200 Varick St., N. Y. 14.

PARKER-KALON®
FASTENERS

If you write maker identify as IEN - 6146

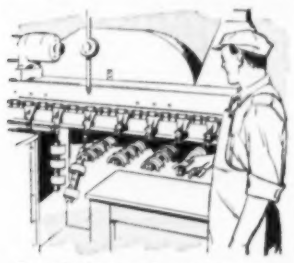
See how Carboloy magnets save time, money in the shop

FREE
PERMANENT MAGNET IDEA KIT

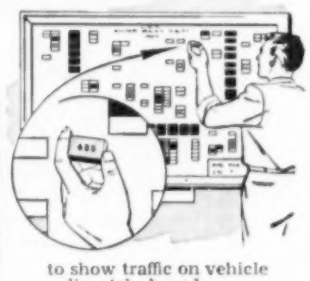


Send for free magnet kit containing suggestions that really pay off in the plant. See how Carboloy permanent magnets can eliminate costly clamps, jigs, vises . . . how they'll save you time and maintenance costs. Magnets need no electric power. Cost nothing to operate – last forever.

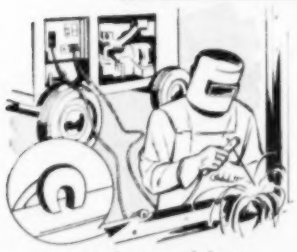
Shown below are a few of the ways magnets are used as mechanical holding devices – working better, cheaper, faster than devices previously used.



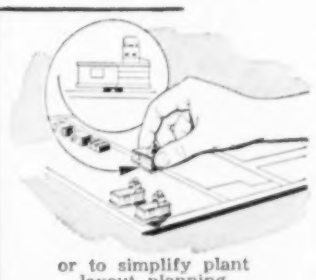
In plating-rack conveyors, for example . . .



to show traffic on vehicle dispatch board . . .



to attach ground from portable welders . . .



or to simplify plant layout planning.

Get a "You-Try-It" Magnet Assortment

Shop Package No. 1 – Contains 48 Carboloy Permanent magnets: 8 styles – 3 pairs each. Magnetic pull up to 2 lbs. per magnet. Price $10.00. Send coupon today.

Shop Package No. 2 – Contains 18 magnets: 4 styles – 2 pairs each; and 1 style – 1 pair. Magnetic pull from 3 lbs. to 12 lbs. per magnet. Price $15.00. Order today.

"Carboloy" is the trademark of the Carboloy Department of General Electric Company

MAIL THIS COUPON TODAY

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
11177 E. 8 Mile Ave., Detroit 32, Michigan

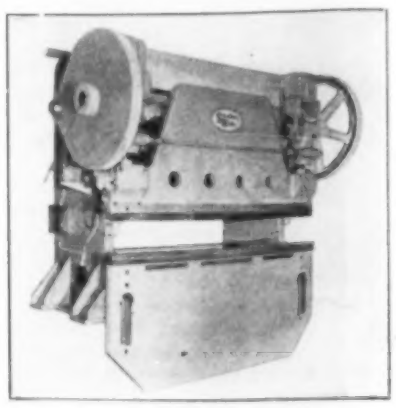
☐ Send me free Magnet Idea Kit
☐ Send me ___ Shop Package No. 1 at $10.00 each, postpaid.
☐ Send me ___ Shop Package No. 2 at $15.00 each, postpaid.
☐ Enclosed is check or money order for $ ___ . ☐ Send C.O.D.

Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 6148

BENDING . . Motor driven press, 400 ton, 8½ ft. between housings

Source: STRUTHERS WELLS CORP.
51 Wells St., Titusville, Pa.



Ask for Bulletin P-752

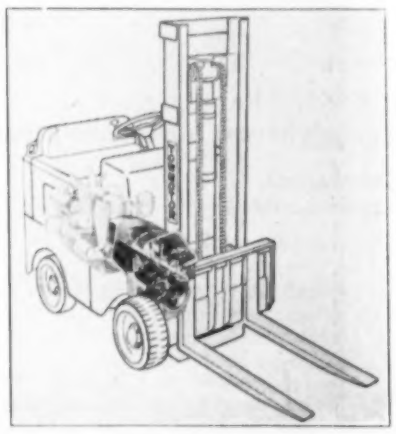
Model 400-PB-8 is a new unit in a series of six 400-ton bending machines in an overall total of 44 machines in the company's Press Brake line. The new machine has a throat depth measuring 14 in., stroke length of 4 in., ram adjustment of 6 in. and die space measuring 14 in., with the ram down and the adjustment up. Floor space measures 136 in., front to back, by 176 in. right to left. Height above the floor is 145 in. and distance below the floor is 28 inches.

Construction includes a pneumatic clutch and separate brake with operating controls for cycling and inching as well as a control for single work stroke and return of the ram to "up" position. Force is exerted along the center line of the side frame and directly down to the bed to prevent twisting the side frames, to minimize deflection and to assist in maintaining alignment between the ram and bed. Major points are lubricated by automatic force feed equipment. Safety pins lock out the controls to prevent accidental engagement of the clutch on the new press.

If you write maker identify as IEN - 6149

TRUCK . . Hydraulic transmission for company's engine driven trucks

Source: TOWMOTOR CORP.
1224-28 E. 152nd St., Cleveland 10, Ohio



Available to order

Gear shifting is eliminated, smooth starts and stops are assured, when the new TowmoTorque drive transmission is installed in new engine driven trucks in the company's lines. The transmission consists of a hydraulic torque converter, a double clutch to select forward and reverse movement and constant mesh gearing.

The operator selects direction by moving a small lever beneath the steering wheel. He depresses the throttle pedal to speed up the engine and start movement. He can reverse the direction lever, while he is moving forward, to assist in stopping the motion in addition to applying the truck brakes. A Creep Control pedal permits "inching."

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6150

Don't spoil it. KROIL it!

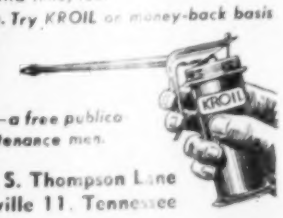
Don't ruin a valuable piece of equipment merely because some part is rusted tight. Apply *KROIL*, the amazing new chemical lubricant that creeps into millionth inch spaces (proved by laboratory tests), dissolves rust, supplies necessary lubrication and . . .

Loosens Frozen Parts

11,000 of America's leading plants can't be wrong. They have used KROIL for ten years and depend on it to save expensive labor and valuable parts. They say: "Kroil loosened bushings after a 12-ton press had failed" . . . "on repairing heat treat trolleys formerly destroyed every nut. Now KROIL saves them all, and time, too."

You too can get these results. *Try KROIL on money-back basis*

Gallon, $3.85 with Kroiler squirt gun, $4.95, f. o. b. factory.



Ask for GENIUS AT WORK—a free publication full of ideas for maintenance men.

KANO LABS. 1071 S. Thompson Lane, Nashville 11, Tennessee

If you write maker identify as IEN - 6151

Small precision metal parts... Torrington makes them better, and for less!

FREE CATALOG — shows the great variety of small parts we can produce inexpensively and promptly. Send for copy today!

If your product uses small precision metal parts . . . pivots, pins, dowels, rollers, mandrels, needles, punches, etc. . . . send us your blueprints for a prompt quotation.

As a leading contract fabricator, TORRINGTON is equipped with the special machinery to produce in any quantity for quick delivery at low prices.

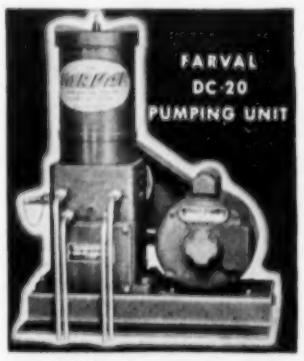
THE TORRINGTON COMPANY
Specialties Division
360 Field Street • Torrington, Conn.

Makers of
TORRINGTON NEEDLE BEARINGS

If you write maker identify as IEN - 6152

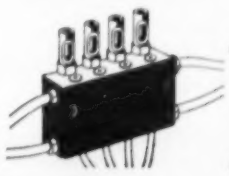
NEW AUTOMATIC LUBRICATION FOR SMALLER MACHINES

SMALLER machines can now have a completely automatic system of Farval centralized lubrication—as efficient and economical as the larger Farval systems which have proved so valuable on heavy industrial equipment during the past 26 years.



Only 20½" high. Base 15" x 10½"
Driven by ¼ hp ac motor.

Heart of the system is the new small DC-20 pumping unit which is adaptable for compact, easy installation. Designed for use with unique Dualine valves that deliver exact measured amounts of lubricant to each bearing as often as desired. No need to stop machine for lubrication. Eliminates down time required for hand oiling. Saves up to 75% in lubricant. WRITE NOW FOR FREE BULLETIN 39.



THE FARVAL CORPORATION
3258 East 80th Street
Cleveland 4, Ohio

Farval is an affiliate of The Cleveland Worm & Gear Co.

If you write maker identify as IEN - 6153

NEED COPIES?
—produced in your own office

MODERN MIMEOGRAPHING — New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN SPIRIT DUPLICATING—Completely new A. B. Dick spirit duplicator produces 120 to 150 sharp copies a minute in 1 to 5 vivid colors from one master in one operation. Automatic feed—post card to legal size—16 lb. to 70 lb. stock.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections — (3) more successful filing — (4) marked superiority in resistance to fingerprints.

(MODERN FOLDING—small, low-cost A. B. Dick electric folding machine saves time and money.)

Write Dept. IEN-53 for full information—or call the A. B. Dick Distributor listed under Duplicating Products in the classified section of your phone book.

A·B·DICK
THE FIRST NAME IN DUPLICATING
A. B. Dick Company • 5700 Touhy Avenue • Chicago 31, Illinois

If you write maker identify as IEN - 6154

New... All-Purpose SNIPS with PROTO Professional Quality!

PROTO's new snips fill the needs of practically all industries, mechanics and craftsmen. Four basic styles cut hundreds of materials. They give smooth, fast, accurate cuts... produce better finished work, clean and unbent...have great strength and toughness...are sturdily built. Buy these *professional-quality, all-purpose* snips from your PROTO dealer. Send 10¢ for 68-page catalog of entire line to

PLOMB TOOL COMPANY
2271Y Santa Fe Ave., Los Angeles 54, Cal.
5382

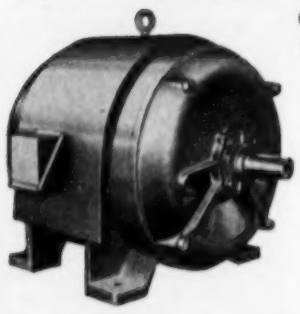
The PROTO Line Includes Wrenches, Pliers, Screwdrivers, Punches, Chisels, Sockets & Handles, and Many Others.

Eastern Factory—Jamestown, N.Y.

PROTO TOOLS
PROTO means PROfessional TOols

If you write maker identify as IEN - 6155

Wagner Industrial Motors



100 to 400 hp

Designed to meet modern industrial requirements

The Wagner line of general purpose polyphase squirrel-cage motors includes a "family" of open protected-type ratings from 100 through 400 horsepower. These motors are protected by a rugged steel frame with ventilating openings at the bottom only, and by endplates of drip-proof design.

Two outstanding features—winding strength and adequate ventilation—mean that these Wagner motors are built to stand the shocks of starting heavy loads repeatedly, and to operate continuously, under normal conditions, without exceeding their rated 40° C temperature rise.

Write for complete information.

M53-21

Wagner Electric Corporation EST. 1891

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 6156

INCREASE PRODUCTION

with TRICO KLIPLOK CLAMPS FOR FUSE CLIPS

They "LOCK LIKE A VISE"

Save
- POWER
- FUSES
- CLIPS

CUT MAINTENANCE COSTS

"Kliploks" lock fuses and clips together, supply the necessary pressure for easy flow of current. Use them on OLD equipment to stop existing trouble . . . on NEW equipment before trouble starts.

- Reduce Premature Fuse Blowings
- Prevent Unnecessary Shutdowns
- Stop Heating and Arcing at Contacts
- Eliminate Burnt Fuses and Clips
- Easily and Quickly Installed

WRITE FOR BUL. NO. 6

TRICO "Kliplok" TEST CLAMPS

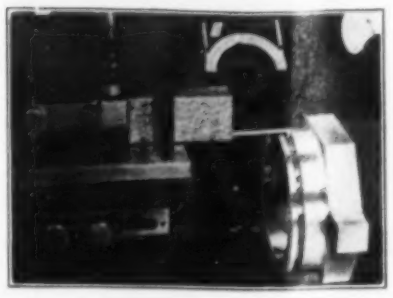
Handy for temporary connections. Clamp flat or round objects. Attached in a jiffy. 7 sizes 0 to 300 Amps.
Write for Bul. #7

TRICO FUSE MFG. CO., Milwaukee, Wis.
In Canada: IRVING SMITH LIMITED, Montreal

If you write maker identify as IEN - 6157

GAGE . . Profilometer tracer to check surface roughness in grooves

Source: MICROMETRICAL MFG. CO.
343-47 S. Main St., Ann Arbor, Mich.



Bulletin LT76

New tracer head for the company's Type-KB Profilometer surface roughness gage applies in grooves and behind shoulders on metal work pieces. The tracer point is at the bottom of a vertical extension from a long beam. The tracer assembly is supported and moved mechanically by a Linear Piloter.

Surface roughness can be measured across flat bottom grooves to ¼ in. in depth and behind shoulders to ¼ in. in height. Length of trace is to 1/16 in. in grooves measuring 5/32 in. in width. Application can be made also in inside diameters from 25/64 in. to flat, and on any outside diameter or horizontal flat surface.

If you write maker identify as IEN - 6158

LUBRICATING . . Non-melting grease for plain and anti-friction bearings

Source: HOOD REFINING CO.
553 Hood Bldg., Manor, Pa.

It is plastic and pumpable

Gibplex trade names a new grease based upon the material Bentone and containing Gibraltar oil concentrate. It will withstand temperatures to 500 deg. F. Any evaporation at elevated temperature will leave the bearing surfaces wet. The new lubricant is recommended for use as a companion material to the company's Multiplex non-melting grease, previously described IEN-11359-51. It is suited for the more difficult lubricating jobs.

If you write maker identify as IEN - 6159

BROACHING . . Kit for keyways four widths, eighteen bore diameters

Source: DU MONT CORPORATION
du Mont St., Greenfield, Mass.

Price on request

Combination 1-1A is a new kit assembly of push broaches and bushings to cut keyways ranging from ⅛ to ⅜ in. in width in bores from ½ to 1 9/16 inches. Packaging is in a wood case measuring 14 by 8 by 3 inches. Bores range in 1/16-in. increments. The four widths are ⅛, 3/16, ¼ and ⅜ inch.

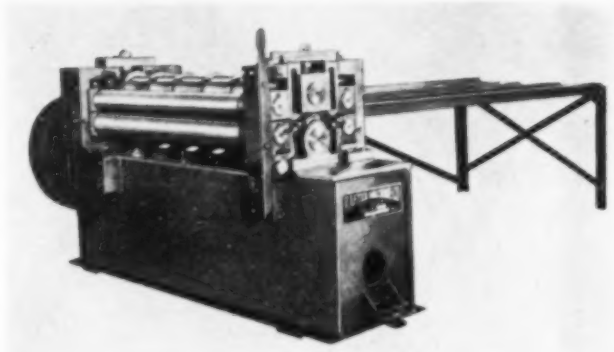
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6160

If you write maker identify as IEN - 6161

RAFTER GANG SLITTER

For Lasting Accuracy

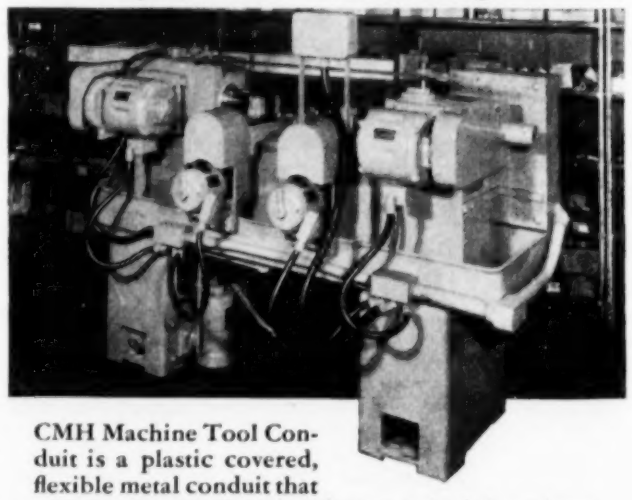


With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES
& PRESS BRAKE FORMING DIES

If you write maker identify as IEN - 6162

CMH MACHINE TOOL CONDUIT protects vital wiring



CMH Machine Tool Conduit is a plastic covered, flexible metal conduit that protects electrical wiring from on-the-job moisture and liquids. It is crush-resistant and absorbs machine motion without losing its moisture tightness. Sizes from ⅜" to 2" I.D. Write for bulletin.

CHICAGO METAL HOSE
DIV. FLEXONICS CORPORATION
1333 S. Third Avenue, Maywood, Illinois
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

If you write maker identify as IEN - 6163

NOLAN ONE-MAN CAR DOOR OPENER

Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry! New chain has 2000 lbs. tensile strength.

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.

New safety features make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

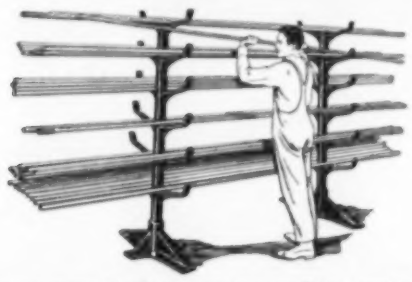
Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$37.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN - 6164

for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save waiting mechanics time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

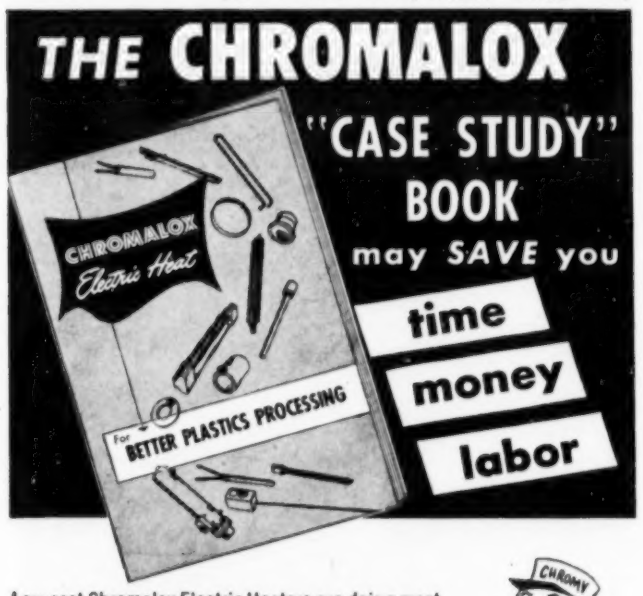
All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co., 122 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

If you write maker identify as IEN - 6165

THE CHROMALOX "CASE STUDY" BOOK may SAVE you time money labor



Low cost Chromalox Electric Heaters are doing most plastics processing jobs better, more efficiently, at less cost. This booklet highlights some of these jobs which range from vinyl fusing and laminating through forming, embossing and molding.

Write today for your copy of this useful and profitable booklet of "Case Studies."

IB-26

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pgh. 8, Pa.

See Chromalox Radiant Panels Advertisement, Page 5

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 6166

For Surface Blemishes in ALUMINUM CASTINGS

Have you used the Smooth-On Foundry Cement made especially to correct blow holes, porous and rough spots, dents and other unsightly but harmless surface defects in otherwise sound *aluminum alloy castings?*

Applied like the widely used Smooth-On *Iron* Foundry Cement, Smooth-On No. 8 *Aluminum* Cement fills in evenly, hardens quickly, matches perfectly. Stays in place, too, for it expands slightly as it sets.

Smooth-On No. 8 Aluminum Cement comes in 1- and 5-lb. sizes. 1 lb. will fill 17 cu. in. Order it by NAME AND NUMBER from your supply house. If they haven't it, write us. If you have not yet discovered Smooth-On No. 8, ask us for

FREE SAMPLE TO TEST

You'll receive also the famous 40-page SMOOTH-ON HANDBOOK, filled with industrial uses for the various Smooth-On Cements. 140 illustrations. Write today.

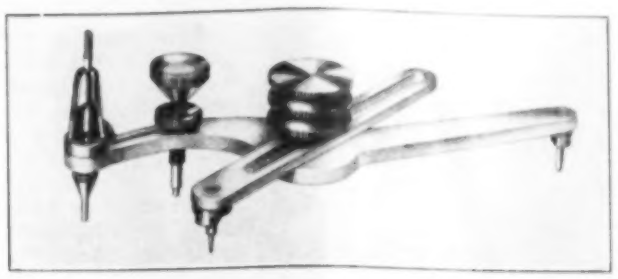
SMOOTH-ON MFG. CO., Dept. 1
570 Communipaw Ave., Jersey City 4, N. J.

Do it with SMOOTH-ON
No. 8 ALUMINUM CEMENT

If you write maker identify as IEN - 6167

DRAFTING . . Lettering scriber for drawings, traces master characters

Source: WOOD-REGAN INSTRUMENT CO.
182 Franklin Ave., Nutley, N. J.



Data, pictures, prices in Catalog 71

Universal Scriber has been added to the Wrico line of lettering equipment with which notes, dimensions, captions, titles can be lettered quickly and neatly on drawings and tracings in either pencil or ink. The scriber operates from a line of master characters engraved in a guide strip made of metal. A groove, along the strip, centers the instrument and permits moving it along for succeeding characters.

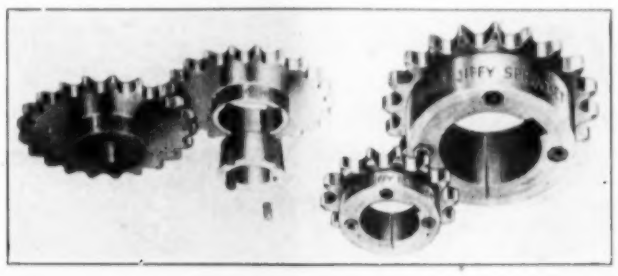
Construction includes a center adjustment with which the characters can be made erect or sloping to the front or rear, a spring post between the tracer point and the pen or pencil point to keep the point up from the work surface until a little pressure is applied on the central tracer knob.

The tracer point can be set in any position within a circle 4½ in. in diameter. Lettering guide holders are available in 14 to 36-in. lengths. Master letter sizes range from 1/16 to 5/8 in. in height. Complete lettering sets are available.

If you write maker identify as IEN - 6168

DRIVE . . Roller chain sprockets mount on interchangeable split hubs

Source: UNION CHAIN & MFG. CO.
453 Edgewater Ave., Sandusky, Ohio



Data and list prices in Catalog J-1

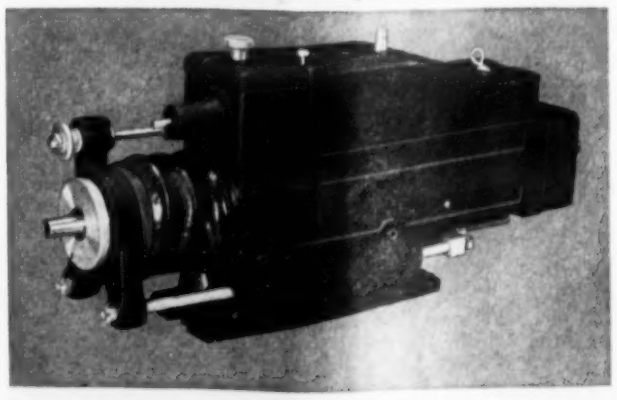
Hub bore ranges in increments of 1/16 in. in this new combination assembly of roller chain sprocket and Taper-Lock split hub. It is manufactured by the company under patent No. 2402743. It is possible to select and change hubs for changing shaft diameters without having to alter the sprocket. Screws pull the hub into place on its outer taper seat, the movement also closing it in to grip the shaft, in addition to the driving action provided by the keyway. Removal is simplified by backing out the two screws and placing one of them in a third hole which pulls the bushing out as the screw is turned.

Stock sizes range from ½ to 1¼ in. pitch for No. 40 to No. 100 chain. The smallest sprocket is available in 14 to 112 teeth and the largest from 11 to 60 teeth.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6169

NEW DRILL UNIT HAS 3" STROKE Hydraulic Feed—Electric Drive Air Powered Rapid Advance



The Bellows-Locke Drill Unit is pulley driven. A 1750 RPM motor (optional) develops a spindle speed adjustable from 690 RPM to 4630 RPM with Bellows Speed Selector Pulley. Unit handles up to ¼" drill. Mounts in any position. Built-in directional air valve, electric and manual cycle controls.

WRITE FOR LITERATURE — DEPT. IEN 653 689A

The Bellows Co.
AKRON 9, OHIO 1499

If you write maker identify as IEN - 6170

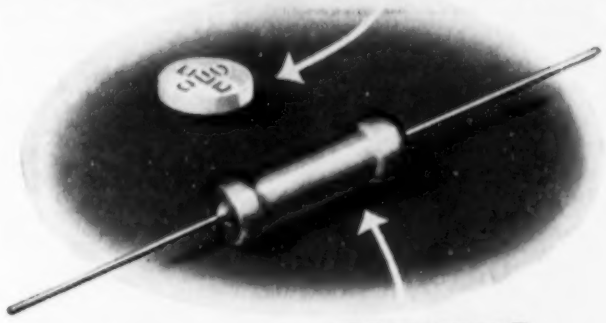
INVESTIGATE Sta-Warm COMPOUND - RESIN - SOFT METAL MELTING and DISPENSING EQUIPMENT

Outline your current compound melting problem to Sta-Warm today and ask for their engineering recommendations.
No obligation.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 6171

SECOND best thing for INSTALLATION HEADACHES



Here's the FIRST!

THE small size of *Axiohm resistors* simplifies installation in radio, electronic and related equipment. These rugged miniature Vitrohm resistors are designed specifically for easy installation in circuits used in highly compact equipment. They are mounted without lugs, bolts or brackets on their own wire leads which are hot tin-dipped for ease of soldering. They are available in the following ratings and sizes:

5 watts, 1 to 10,000 ohms, 1" long • 10 watts, 1 to 50,000 ohms, 1¾" long
or custom built to your specifications

Write for Ward Leonard Catalog 15. • 33 South St., Mt. Vernon, N. Y.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RHEOSTATS • RELAYS • MOTOR CONTROLS • CHROMASTER

If you write maker identify as IEN - 6172

Heart of a Champion

TUNGSTEN — A highly magnified tungsten coil on a mandrel

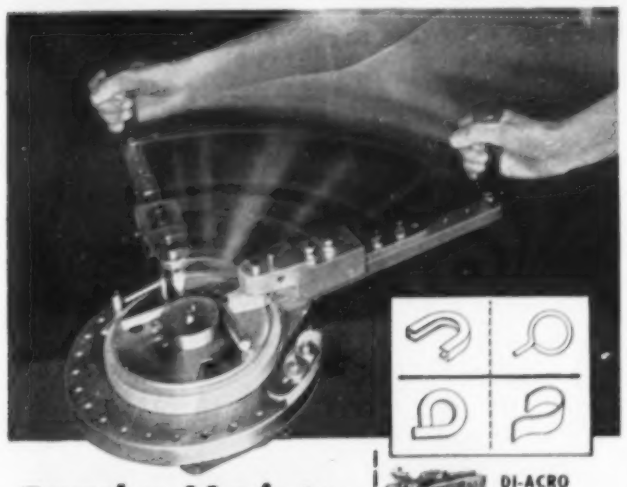
99.99% pure tungsten makes up the heart of a Champion. Asbestos, or even fire brick, would melt at the 5000° glowing temperature of a tungsten filament within an incandescent lamp. A 6 watt lamp filament is made from tungsten wire drawn to a diameter of .00047 inch. A variation of five-millionths of an inch can affect filament life as much as 25%.

Backing up the heart of a Champion are years of experience. Champion lamp suppliers offer the utmost in lighting value and service. Specify Champion lamps.

May we mail you this new booklet D CHAMPION QUALITY, containing many other facts about lamps?

CHAMPION LAMP WORKS
Lynn, Massachusetts
A DIVISION OF CONSOLIDATED ELECTRIC LAMP CO.

If you write maker identify as IEN - 6173



Bend a Variety of Materials

Accurately, Easily, Quickly with a versatile Di-ACRO* BENDER

Simple and complex bends can be made in ductile materials. Capacity of five hand models is from 1/16" wire to 1" round mild steel bar. Tooling is available for most forming requirements in solid materials and tubing, also many special accessories.

DI-ACRO HYDRA-POWER BENDER

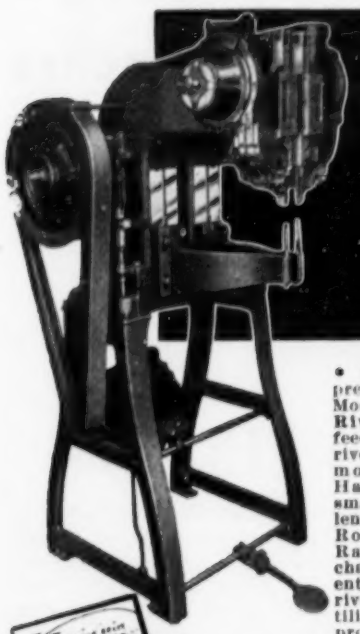
A universal hydraulically operated bending machine that is equally as flexible as hand operated machine. Di-Acro Hydra-Power Benders are especially designed for those long runs and heavy bending operations which are impractical for manually operated equipment.

WANT MORE INFORMATION?
Send for New 32-Page Catalog
*Pronounced Die-ack-ro

di-acro PRECISION METALWORKING MACHINES

O'NEIL-IRWIN MANUFACTURING CO.
718 8th Avenue • Lake City, Minn.

If you write maker identify as IEN - 6174



LOWER THE BOOM ON COSTS

SET RIVETS FAST

2 at a time with the

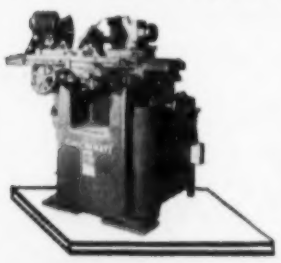
Chicago "214"

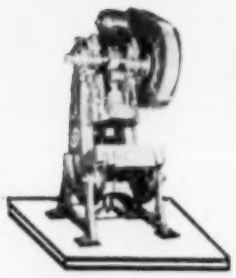
• With every press on foot pedal Model 214 Chicago Double Rivet Setter automatically feeds, inserts and clinches two rivets. 14-inch throat accommodates large assemblies. Handles 9/64" diameter or smaller steel tubular rivets — lengths to 7/8". Quick Change Rotary Type Hoppers and Raceways permit 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to versatility. For help with fastening problem . . . send sample assembly (or a blue print) for free fastening analysis.

FREE CATALOG *contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.*

Chicago Rivet & MACHINE CO.
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

If you write maker identify as IEN - 6175





For Longer Machine Life Use UNISORB® Mountings

Eliminate 60%-85% of transmitted machine vibration, reduce machine maintenance and eliminate floor drilling — by mounting your machines on UNISORB.

No bolts, no lag screws when you use UNISORB pads with our special cement. Or, you can use UNISORB pads precoated with adhesive when mounting machines that do not require shimming.

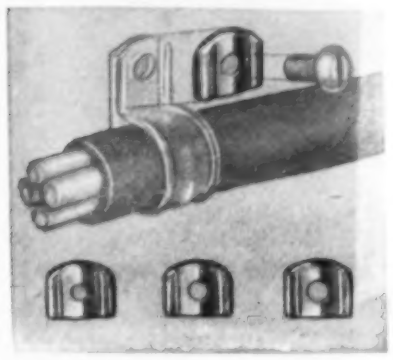
"Why It Pays To Anchor Your Machines With UNISORB" tells the entire story about this modern way to reduce noise and vibration. Ask for your copy. No obligation.

the FELTERS company
208 South Street
Boston 11, Massachusetts
WRITE FOR YOUR COPY OF THIS INTERESTING BOOK

If you write maker identify as IEN - 6176

FASTENING . . Plated steel washer to reinforce plastic cable clip

Source: WECKESSER CO.
5259-63 N. Avondale Ave., Chicago 30, Ill.



Load ratings on request

Load capacity for the company's ethyl cellulose and nylon cable clamps is improved by addition of this new cadmium plated steel washer. It applies over the plastic legs, distributes pressure applied by the holding screw, reinforces the clamp structure. The washer is available in four sizes to cover the line of clamps which will hold cables or wire bundles from 1/8 to 1 1/4 in. in diameter.

If you write maker identify as IEN - 6177

STRAPPING . . Self-adhesive tape, filament reinforced, "measure marked"

Source: MYSTIK ADHESIVE PRODUCTS
2633-37 N. Kildare Ave., Chicago 39, Ill.

For packing and shipping

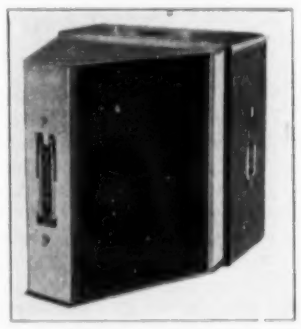
Flexstron 6220 is a new self-adhesive rubber fibrous tape that has been reinforced with filaments to provide tensile strength of 250 lb. per inch of width. The tape is suited for load strapping, binding, bundling, sealing. It adheres upon application, holds tight during handling and shipping operations. It will not stain and can be stripped clean.

Application is by a hand dispenser. A feature is the markings that have been placed on the tape at 6-in. intervals to assist in gaging required length. The tape conforms to any shape and will not cut into a carton.

If you write maker identify as IEN - 6178

DUST COLLECTING . . Air filter mounts on rear of Young space heaters

Source: YOUNG RADIATOR CO.
719 Marquette St., Racine, Wis.



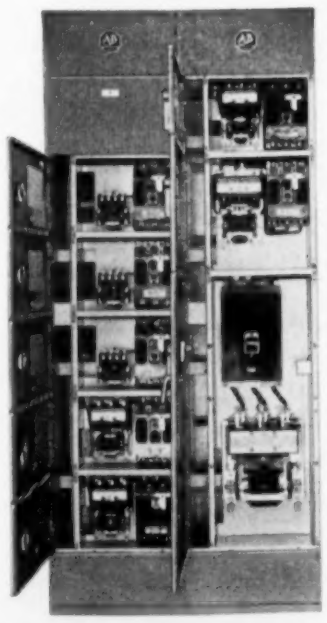
Six sizes

Clean Core trade names new assembly of V-shaped steel frame and two standard air filter panels to mount on the rear of the company's Type-SH unit space heaters. The unit closes in the motor and fan on the heater, prevents dust, oil mist, lint from entering the heater housing.

The panels can be replaced when they become dirty. The problem of cleaning the heater is eliminated. Throw-away filters can be supplied for heaters operating in the presence of paint spray.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6179



Bulletin 798 Multi-unit Control Centers for Centralized Operations

A-B Quality

Bulletin 798 Multi-unit Control Centers can be assembled in one or more vertical sections containing starter panel units with disconnect switch or circuit breaker connected to a common power bus. The result is a completely enclosed, dead front, floor mounted switchboard, ready for connection to your motors in the plant.

Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wisconsin

ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

If you write maker identify as IEN - 6180

Industrial uses of LULL Shoveloaders:

- Moving
- Lifting
- Loading
- Clearing
- Scraping
- Sweeping
- Snow Removal

Lull Shoveloader is a handy machine to have around the plant. Literally has 101 uses to keep it busy all year 'round. Versatile . . . dependable . . . economical. Material buckets from 3/4 to 1 cubic yard capacity . . . 1,800 to 6,000 pounds lifting capacity. Lull Shoveloader attachments include cranes, bulldozers, sweepers, coal buckets, snow buckets, etc.

Send for your free copy now

BAKER-LULL CORPORATION
a subsidiary of The Baker-Raulang Co., Cleveland, Ohio
362 West 90th Street • Minneapolis, Minn.

If you write maker identify as IEN - 6181

LIKE AN

ATOM-IC EXPLOSION

Just 1/32" (pinhole size) faucet leak

MUSHROOMS into ATOMIC WASTE

of approximately 95,000 gallons of water yearly—costing:

$24.14

@ $1.90 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 95,000 gallons costs approximately:
$38.91 if coal (9879 lbs.)
$91.08 if oil (792 gals.)
$84.41 if gas (84,411 cu. ft.)

Above figures authenticated by Hackensack Water Co. and American Gas Association.

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with 'SEXAUER' "Easy-Tites" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D.

"EASY-TITE" Faucet washers

. . . a modern laboratory triumph, are compounded from du PONT NEOPRENE (tested up to 300°F.) instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day superheating water systems—that formerly broke down washer's structure.

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape . . . causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold FAUCETS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG,
Edition G, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. *Send for your copy today!*

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your NEW Catalog promptly.

J. A. SEXAUER MFG. CO., INC., Dept. K-63
2503-05 Third Avenue, New York 51.

as advertised in **THE SATURDAY EVENING POST**

SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

If you write maker identify as IEN - 6183

PRESENTING American's Sensational '53

KING SIZE SELECTION OF DRILL BUSHINGS

VIRTUALLY ELIMINATES SPECIALS!

American's NEW CATALOG

Gives You This KING SIZE Selection!

Our new selection of standard types and sizes are available to you through our fully stocked Distributors.

Our New Catalog was produced for your convenience • It contains a KING SIZE selection of standard types and sizes • 50% of your specials are now American's standards • All lengths are now standard (no added charges) • Simplifies selecting and ordering • Handy reference charts, pricing and technical data • Clearly organized • Plastic coated.

Get Your FREE COPIES Today!

AMERICAN DRILL BUSHING CO.
5107 PACIFIC BLVD. LOS ANGELES 58, CALIFORNIA
PHONE LOgan 5-7147

If you write maker identify as IEN - 6184

Which Do You Choose SAFETY or RISK?

Compare the Advantages of Modern Scaffolds Over Block and Tackle!

GOLD MEDAL MIDGET Safety Swinging Scaffolds

- ✓ Light, compact, easy to rig.
- ✓ ¼" *steel* wire rope, wound on drum, eliminates dangerous hitches.
- ✓ Machine positively locked three ways to prevent slipping or running down. Stirrup *bolted* to operating mechanism.
- ✓ One man can carry a Midget Machine.
- ✓ A Midget offers built-in safety in every way.

Scaffold Falls, 2 Hurt in Plunge

Two cement finishers were seriously injured Tuesday when a scaffold collapsed, tumbling them 25 feet to the street.

The accident occurred when the buckle on a block and tackle slipped as the men worked on a three-story garage at [illegible]

BLOCK AND TACKLE Scaffolds

- ✗ Heavy, bulky.
- ✗ Bulky coils of rope tangle easily. Manila rope subject to rapid deterioration.
- ✗ Tying and untying hitches is always dangerous. Cradle iron not securely fastened to tackle.
- ✗ Large bulky coils of rope require constant inspection, as well as extra handling and storage space.
- ✗ Danger is always present in this type equipment.

LADDERS AND SCAFFOLDS FOR ANY PURPOSE
.... Any Place .... Any Time

Gold Medal Ladders Scaffolding ®

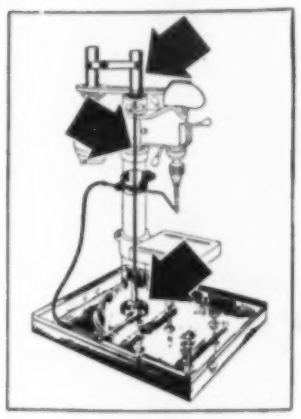
for Greater Safety...Efficiency...Economy

THE PATENT SCAFFOLDING CO., Inc.
38-21 12th Street, Dept. IEN, Long Island City 1, N. Y.
Branches in All Principal Cities

If you write maker identify as IEN - 6186

PUMP . . Machine driven centrifugal and sump pan for a drilling machine

Source: WADE & SONS
948 E. Truman Road, Independence, Mo.



$18.50 with the pan

Illustrated in position, in and under a standard upright drilling machine, is a new centrifugal pump, sump pan, delivery line and nozzle with which coolant can be circulated to tools and work. Drive is by extension pulleys that mount on the upper ends of the machine's vertical drive motor and on a shaft leading down through the machine column to the pump at the bottom. The drilling machine stands in the sump pan. The pump inlet is screened against chips.

If you write maker identify as IEN - 6187

INSULATING . . Silicone varnish for use on electrical equipment

Source: DOW CORNING CORP.
P. O. Box 592-A, Midland, Mich.

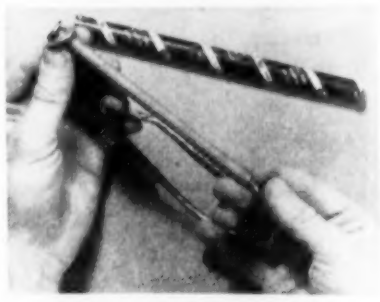
Technical data upon request

Varnish 997 is a new silicone material for dip coating and impregnating applications to be followed by baking for 10 to 12 hr. at 350 deg. F. The material is characterized by its freedom from tendency to bubble at 300 deg. F. and by its dielectric strength which goes as high as 2,000 volts per mil. Approximately one-half of this strength is retained after 500 hr. at 300 deg. C. in impregnated glass cloth.

If you write maker identify as IEN - 6188

FUSE . . EEI-NEMA standard link for use in distribution circuits

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



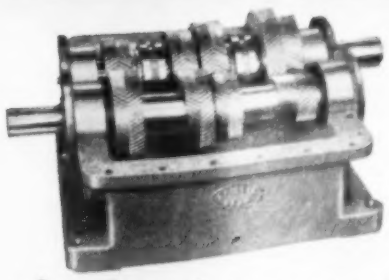
Type K is illustrated

Type K, for fast operation with rating from 1 to 200 amp., and Type T, for slow circuit opening with ratings from 6 to 200 amp., are available in a new line of fuse links. They are electrically and mechanically interchangeable with other makes of EEI-NEMA standard units. Current carrying capacity is in excess of rating. Long auxiliary tubes provide for full range operation of the fuse cut-out. Time current curves, coordination charts and conversion procedures are available on request to assist in change-over to the new link.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6189

Philadelphia CHANGE-SPEED UNIT



Standardized Construction
—to give you Greatest Economy

Based on long experience in building Change-Speed Units to individual specifications, Philadelphia has developed a line of *standardized* units. This cuts the high cost and delayed deliveries of former methods.

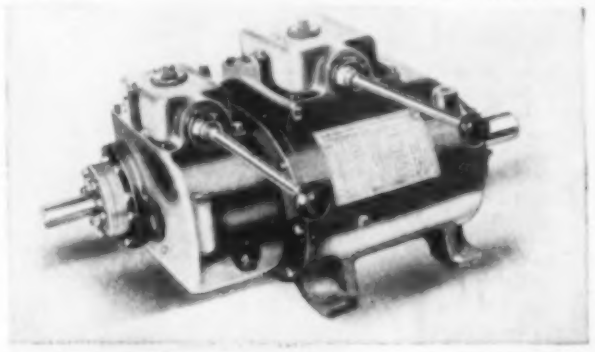
Units are positive geared drives using herringbone gears throughout. No belts to wear or slip. Ratios are definite for speed increasing or reduction or in combination. Wide range of horsepowers in 2, 3 and 4 speed units.

Write for catalog giving full details.

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND G STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON • LYNCHBURG, VA.

If you write maker identify as IEN - 6190

WESTERN "SUPER" *with* 8 SPEED CHANGES
for use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. CAPACITY 50 HP. in geometric progression of 1.29 (total reduction or 6:1)



(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type. Ratios — 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . *we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.*

up to 100 h. p. For Materials Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Bolt Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. — EAST SUSTON — DETROIT, MICHIGAN

If you write maker identify as IEN - 6191

ALL POWER TRUCKS LIFT, MOVE AND STACK—

but only Yale Gas Trucks have Fluid Drive

Smooth, trouble-free Fluid Drive gives you 3 to 8 times longer clutch life... saves costly, work-stopping clutch repair and too-frequent replacement.

• Less down time is just one of the big advantages of Yale-exclusive Fluid Drive. You get continuous, stall-free operation . . . smoother stops and starts to protect your load as well as your operator.

• Other Yale Gas Truck features . . . many of them exclusive . . . include rugged 65 HP Industrial Engine —safer, surer Automotive-type Brakes—Shockless Steering—Hypoid Gears.

• Yes, YALE trucks and attachments lead in money-saving efficiency . . . cuts costs as much as 75% in industries everywhere. And, every truck YALE makes . . . Gas, Electric, Diesel, LP-Gas or Gas-Electric . . . is subject to rigid Quality-Control checks at every stage of manufacture.

YALE*

MATERIALS HANDLING EQUIPMENT
**Registered trade mark*

MAIL THIS COUPON TODAY

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☐ Please send my free copy of *Picture Story of Yale Materials Handling Equipment.*

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Name_____ Title_____
Street_____ City_____ State_____

In Canada write: The Yale & Towne Mfg. Co., St. Catharines, Ontario, Canada

GAS, ELECTRIC, DIESEL LIFT TRUCKS • WORKSAVERS
HAND TRUCKS • HAND AND ELECTRIC HOISTS • PUL-LIFTS

If you write maker identify as IEN - 6193

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities

MAHON

If you write maker identify as IEN - 6194

WEBB TOWVEYOR*

for FASTER, EASIER and SAFER MATERIALS HANDLING

FASTER—Towveyor chain automatically picks up load when pin attached to truck is dropped into slot. Material is delivered to destination without wasted traveling time.

EASIER—Minimum handling of loads by personnel—trucks engage Towveyor chain or are disengaged at any point with a simple lowering or raising of towing pin.

SAFER—Clear floors with no obstacles for employees to walk or truck over, and there are no overhead chains or supports to present safety hazards.

Cut your handling costs with a "Towveyor" system that will speed up distribution, permit faster filling of orders and easier loading or unloading of freight cars and trucks.

*TOWVEYOR is a registered trademark identifying floor truck conveyors manufactured and installed by the Jervis B. Webb Company

For Further Information, Please Write To:

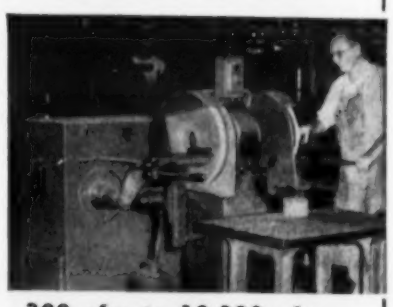
JERVIS B. WEBB COMPANY
8915 ALPINE AVE.
DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES
CONVEYOR ENGINEERS AND MANUFACTURERS

If you write maker identify as IEN - 6195

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

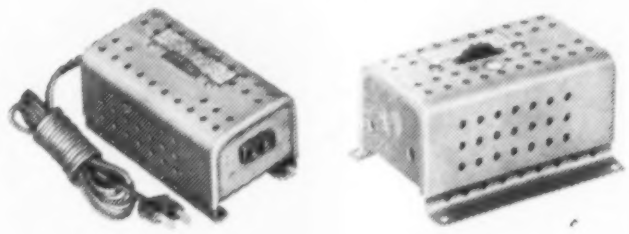
Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 6196

MOTOR CONTROL . . Reactor unit to regulate shaded pole motor speed

Source: KILLEEN & SON
913-17 E. 59th St., Los Angeles 1, Calif.



For fans, air conditioners

Fantrol, for plug-in application to a fan or blower motor, and Varitrol, for direct equipment mounting, are new reactor type speed control units for motors ranging from 1/50 to 1/6 hp. Both provide stepless speed control to any point below rated motor speed. Both are designed for operation in 110-volt ac. circuits. Base dimensions are 5½ by 4½ inches. Overall height from the base to the adjusting finger wheel is 3 inches.

If you write maker identify as IEN - 6197

ADHESIVE . . Thermosetting cement is waterproof, for plastics and wood

Source: CHEMICAL DEVELOPMENT CORP.
19 Endicott St., Danvers, Mass.

No heat needed for curing

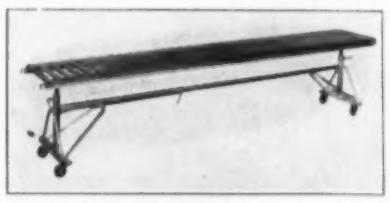
Number 300 is a new waterproof heat resistant adhesive of thermosetting self-curing characteristics. It produces a final glue line that is resistant to attack by salt and fresh water, fungus, acids, solvents, lubricating oils. It is neutral when cured and will not decay cellulose fibers.

Applications include laminating wood in construction of ship keels and timbers, bonding phenolic and urea plastic sheets to themselves and to wood, bonding nylon to itself, bonding lucite and Plexiglas to wood for outdoor applications.

If you write maker identify as IEN - 6198

CONVEYING . . Portable base unit adjustably supports a roller conveyor

Source: STANDARD CONVEYOR CO.
64 Indiana Ave., North St. Paul 9, Minn.



Adjust on job

Tubular and structural members, in welded assembly, are mounted on casters to form a new support for roller and wheel type conveyor sections. There is both vertical and longitudinal adjustment. Three height ranges are 18 to 28 in., 24 to 40 in., 30 to 52 inches. Length adjusts for sections measuring 5 to 10 feet. The swivel casters are fitted with 3-in. ball bearing hard rubber wheels to assist in moving about.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6199

MULTIPLE ASSEMBLIES FOR SMALL PARTS BELONG TO HORSE-AND-BUGGY DAYS

GRIES DIE CASTINGS GIVE YOU TINY PARTS LIKE THESE **COMPLETE** IN **ONE OPERATION**

Compare GRC small die castings with assemblies produced by other methods. GRC completely finished parts save you time, labor, money. Cast in one high-speed operation, they open broad opportunities for your new designs. Fast delivery on 100,000 pieces to many millions.

America's Foremost Producers of Tiny Die Castings

Smallness Unlimited
Max. Wt.: ½ oz.
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Write for bulletin and samples
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Manufacturers of Small Castings Exclusively
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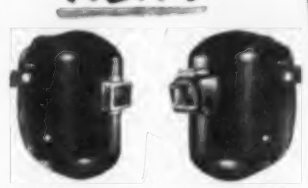
If you write maker identify as IEN - 6200

CESCO RIGHT... before your Eyes!

NEW!



No. 401-7F with Stationary Lens Holder

No. 401-2F with Lift-Front Lens Holder

FIBER GLASS WELDING HELMETS

• Not affected by heat or moisture. Won't warp or buckle. Moulded under great pressure into a strong, tough one-piece shell with high heat insulating qualities.

CESCO Fiber Glass Welding Helmets are light in weight, have formfitting headgear, easily adjusted leather sweatband. They're—"*Right... before your Eyes.*"

Send TODAY for CESCO literature

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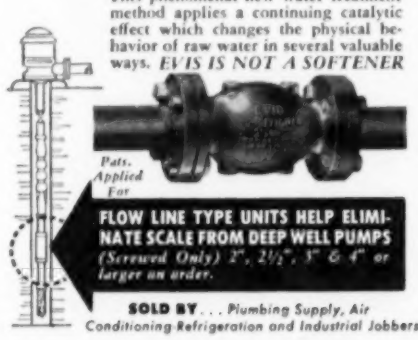
OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write maker identify as IEN - 6201

...factories L-O-V-E EVIS-ized H_2O

. . . because it puts an end to scale deposits in Piping Systems, Boilers (to 175# wp), Condensers, Heat Exchangers and other plant equipment without the use of costly additives.

This phenomenal new water treatment method applies a continuing catalytic effect which changes the physical behavior of raw water in several valuable ways. *EVIS IS NOT A SOFTENER*



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FLOW LINE TYPE UNITS HELP ELIMINATE SCALE FROM DEEP WELL PUMPS (Screwed Only) 2", 2½", 3" & 4" or larger on order.

Sold on 90-DAY MONEY BACK GUARANTEE

SIZES (iron or bronze)
SCREWED • ½" thru 2"
FLANGED • 2" thru 12"

SOLD BY . . . Plumbing Supply, Air Conditioning Refrigeration and Industrial Jobbers

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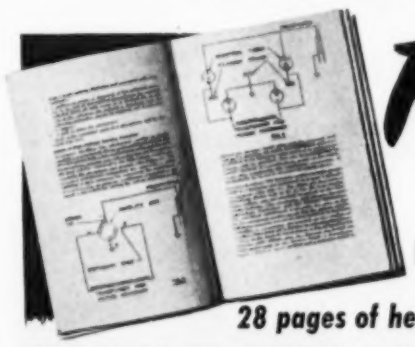
If you write maker identify as IEN - 6202



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FROM WESTERN PRECIPITATION

28 pages of helpful facts about

COTTRELL ELECTRICAL PRECIPITATORS

THIS HELPFUL 28 PAGE BOOKLET—prepared by Western Precipitation Corporation, *pioneers in the commercial application of* COTTRELL *Precipitators*—summarizes and illustrates many of the basic facts you should know about COTTRELL Precipitators for use in recovering industrial dusts, mists, fogs, fumes, fly ash and other suspensions from gases. Written particularly to answer questions of design engineers, plant engineers and others interested in COTTRELL Precipitators, this booklet outlines the various types available, how they operate, principal types of electrical systems and rectifiers, shell constructions, other helpful data.

As long as the supply lasts, a free copy will be sent on request to our nearest office. Write for Bulletin No. C103 today!

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ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS
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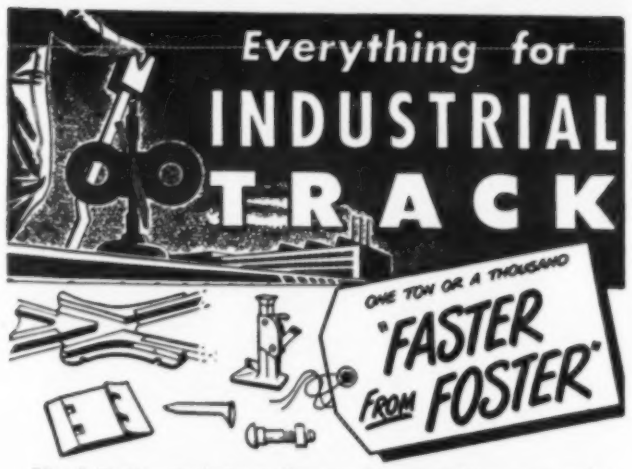
1429 PEACHTREE ST. N.E., ATLANTA 5 • HOBART BLDG., SAN FRANCISCO 4
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

If you write maker identify as IEN - 6203



Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-6.

L.B. FOSTER CO.

CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 6204

Better rubber products are made with Du Pont NEOPRENE

Courtesy: Tingley Rubber Corp., Rahway, N. J.

Neoprene overshoes resist oils, solvents, acids...give lasting service on the job

There's extra durability in these lightweight neoprene overshoes. And there's extra comfort and convenience, too. Neoprene's toughness eliminated the need for the usual fabric liner—resulting in better flexibility and a smooth, easily cleaned inner surface.

Workmen can pull on these overshoes in a jiffy—even over thick-soled work shoes—and be ready for any kind of job. For neoprene resists attack from oil, grease and most chemicals . . . withstands abrasion to a remarkable degree. This means dependable performance in chemical plants, creameries, gas stations and other locations where ordinary overshoes soon fail. Rugged as they are, these new overshoes have amazing stretching properties—only three sizes fit most shoes.

Here, neoprene's remarkable properties make possible a more serviceable variation of an old stand-by. Thousands of other resilient products have been similarly improved with neoprene to assure longer service life. While Du Pont makes no finished goods of neoprene, your manufacturer or distributor will be glad to tell you about the neoprene products he supplies.

FREE! THE NEOPRENE NOTEBOOK

Each issue describes new neoprene products . . . improved old products . . . tips on reducing maintenance costs. Write today for your free subscription. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Div. IE-6, Wilmington 98, Delaware.

NEOPRENE

The rubber made by Du Pont since 1932

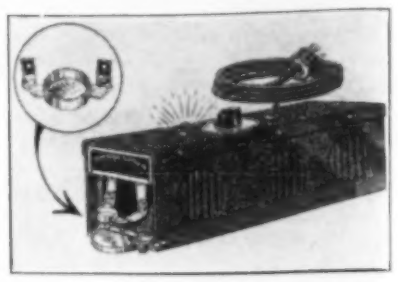
DU PONT

BETTER THINGS FOR BETTER LIVING . . . *through Chemistry*

If you write maker identify as IEN - 6206

SOLDERING . . Transformer machine mounts and holds solder in small dip cup

Source: LYON RURAL ELECTRIC CO.
2073-77 Moore St., IEN-4, San Diego 12, Calif.



$49 post paid

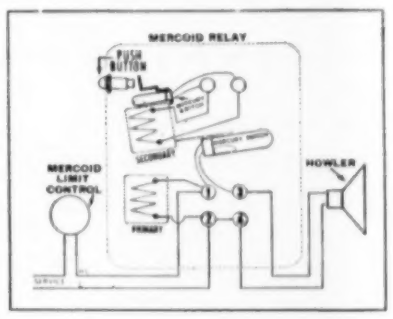
Wire is soldered to terminals, small parts are soldered together, by dipping them into molten solder held in a cup at the front of this new Straight-Line transformer type welding machine. A rheostat on the transformer housing sets heat at a desired point. A pilot light indicates closed circuit. Three sizes of cup, measuring 1, 1½ and 3 in., mount interchangeably on terminals at the housing front. A second small cup is fitted with a clip to mount at the lower front corner of the housing to hold flux. The transformer brings the cup up to a temperature that will melt and hold the solder molten with power input from a 110-volt ac. line. Input rating is 200 watts.

In addition to dip soldering, a vertical knife can be attached in place of the cup to strip plastic insulation from wires. A curved blade can be employed for insertion into small containers for liquid heating. Cable leads 3 ft. in length, with a wire heater loop on the end, can be applied for resistance soldering on work that is not suited for the dip operation. Overall dimensions are 4 by 12 by 4 inches. Illustrated details are contained in a 4-page bulletin, "New Techniques."

If you write maker identify as IEN - 6207

SIGNALING . . Warning circuit relay, closes, opens, recloses circuit

Source: MERCOID CORP.
4203 Belmont Ave., Chicago 41, Ill.



Limits alarm action

Type V2X108 is a new relay assembly for application in the circuit between a limit control and an audible or visual signaling device. The device is actuated through the primary winding of the relay when the limit control closes the warning circuit. The signal continues to sound, or show, until an operator depresses a push button. This tilts the relay secondary and closes a mercury switch circuit to hold the secondary magnetically so the mercury switch in the primary circuit will open the circuit contacts and stop the signal. The relay will hold in this open circuit position until the limit control operates to open the primary. Then the secondary returns to normal position and the circuit is ready for the next warning action.

Rating for the primary relay circuit is 10 amp. on 110-volt ac. The coil can be specified for 110, 220 or 440-volt ac. or dc. Dimensions are about 5 by 2¾ by 6¾ inches. A connector at the bottom of the housing carries three ½-in. openings for conduit or BX cable connection.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6208

QUICK-OPENING PRESSURE VESSEL DOORS FOR ANY PROCESS APPLICATION

GUARANTEED CONSTRUCTION
U-69 A.S.M.E. CODE
ALL SIZES AND TYPES FOR
RETRACTABLE SHELL OR
ANY STATIONARY TANK
NOW AVAILABLE UP
TO 12 FT. DIAMETER AND
EVERY DESIRED PRESSURE.
EASY TO OPEN AND CLOSE
DAVIT TYPE SUPPORTS

Write for our latest Price List!

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WE CAN ALSO QUOTE ON ANY SIZE OR TYPE OF QUICK-OPENING VESSEL

THE H. W. NORTH CO.
1743 PARADE STREET
ERIE, PENNSYLVANIA

SPECIAL PURPOSE MACHINERY and EQUIPMENT for the BASIC INDUSTRIES

If you write maker identify as IEN - 6209

Feature-packed!

New SQUARE D SIZE 4 STARTER

Write for BULLETIN 8536...

Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 6210

Over Half of America's Top Companies Use "Speed Sweep"

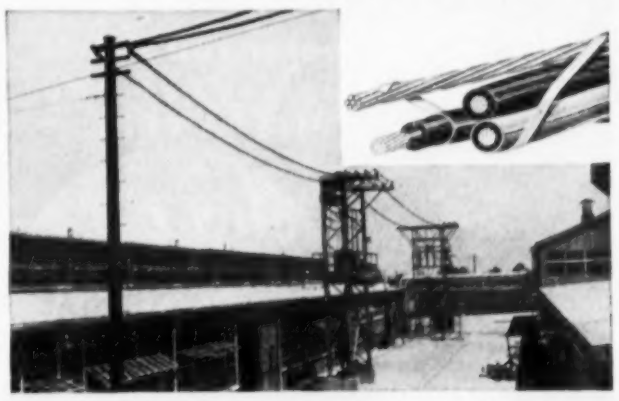
THE BRUSH WITH THE STEEL BACK

BECAUSE it sweeps faster and cleaner, and outlasts ordinary brushes 3 to 1, Speed Sweep has become the No. 1 sweeping tool of American Industry — used by over 50,000 firms. Whether you use a few or a lot of brushes, you'll find it pays to switch to Speed Sweep.

Write for styles, sizes and prices.

MILWAUKEE DUSTLESS BRUSH CO.
MILWAUKEE 3, WISCONSIN

If you write maker identify as IEN - 6211



Okonite Self-Supporting cables for economy, safety, improved operation

4,000 feet of Okolite-Okoprene Self-Supporting cable were installed in this modern glass works. A simple line tap, permitted by Okonite's Dualay construction, serves the 2300/440 volt steel platform substation.

Outdoors or indoors, wherever circuits can be supported overhead by beams, trusses, towers, poles or existing buildings, Okolite-Okoprene Self-Supporting cables provide a neat, dependable and economical method of power transmission. They provide greater safety and better voltage regulation. For detailed information write for Bulletin IE-1058. The Okonite Company, Passaic, N. J.

OKONITE *insulated cables*

If you write maker identify as IEN - 6212

Will Supply . .
Quality PISTON RINGS at ATTRACTIVE PRICES!

Since 1921 we have specialized in making Piston Rings in small quantities up to 32" diameter. With our set up, we are able to supply quality rings for original equipment and for replacement at very attractive prices. Find out what we can do for you.

NEW GUIDE RINGS

Auto-Diesel have developed a new Guide Ring for use in single acting hydraulic cylinders. They are made in sizes from 2" up to and including 10" diameter, and in widths from ¼" to 1½". Consult Auto-Diesel engineers on any ring problem. Can supply many standard sizes of all types and can also develop special rings.

ALSO MAKE CIRCULAR SHAPES

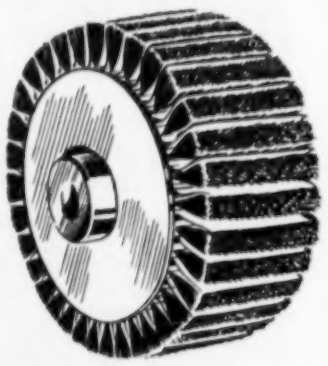
We can supply Circular Shapes CHEAPER and BETTER. Can produce shapes of all types using strip, square, round stock or tubing, in sizes up to ½" square bar stock, in strips from 1/16" thick to 1½" wide.

Write to

THE AUTO-DIESEL PISTON RING CO.
3139 Superior Avenue • Cleveland 14, Ohio
"RINGS and SHAPES *Since* 1921"

If you write maker identify as IEN - 6213

THIS MAY BE THE ANSWER TO YOUR FINISHING PROBLEM!



We say this because the Vonnegut Brush-Backed Polishing Head is designed especially for polishing curved and formed surfaces . . . and because it is an excellent deburring tool. It is used directly on die casting metals, aluminum, brass, bronze and steel — but it is equally efficient for removing bubbles and other blemishes and feathering out such areas on enameled or painted surfaces. Its basic versatility is enhanced by a wide choice in grade and grit of abrasive loadings. It's a unique device available in two models, for portable tools or fixed spindle operation. Write for the Vonnegut Polishing Head bulletins.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, IND., U.S.A.

If you write maker identify as IEN - 6214

Now find motor coil shorts POSITIVELY and INSTANTLY . . .

New CROWN INTERNAL GROWLER

• Anyone can use it
• No Chance for Error!
• Meter Tells the Story!
• For AC Motors

POSITIVE . . . meter needle indicates short in coils of stators or armatures and reveals loose bars in rotors

FAST . . . No time wasted with hack-saw blades or guesswork. "Pinpoints" the location.

EASY . . . no training or experience needed. Meter gives the answer.

• CHECKS 115V. to 440V; stators 6" and up I.D.; armatures or rotors 6" to 14", operates on 115 V. AC.

MAIL FOR COMPLETE DATA

CROWN INDUSTRIAL PRODUCTS CO.
715 Amsterdam Street
Woodstock, Illinois

Please send full catalog information about the New Crown Internal Growler to:

Name_____
Company_____
Street_____
City_____ Zone____ State_____

USEFUL INFORMATION

NEWS NOTES

If you write maker identify as IEN - 6215

AIR CONDITIONING . . Revised information in 1953 edition of the ASHVE Guide, a 1,560-page book

American Society Heating & Ventilating Engineers
62 Worth St., New York 13, N. Y.

Technical data occupies 1,000 pages of the new 31st Edition of the "Heating, Ventilating and Air Conditioning Guide." These data are in 51 chapters grouped into seven sections on fundamentals, human reactions, heating and cooling loads, combustion and consumption of fuels, systems and equipment, special systems, instruments and codes. List price is $7.50.

If you write maker identify as IEN - 6216

BRASS . . Movie shows manufacture of brass sheet, rod, tube, wire in company's mills

Chase Brass & Copper Co.
236 Frank St., Waterbury 20, Conn.

Color sound film in 16-mm. size, "The Science of Making Brass," now is available for showing to industrial and technical groups on a loan basis. Animation is used to describe details of casting, extruding, drawing and rolling. Production scenes were photographed in the company's mills. Running time is 29 minutes.

If you write maker identify as IEN - 6217

BRAZING . . Silver alloy preforms and their use in production brazing described in bulletin

Lucas-Milhaupt Engineering Co.
5049-53 S. Lake Drive, Cudahy, Wis.

Bulletin 52-1-A is written in the form of a technical article by H. H. Olson, company's Chief Engineer. It covers features of mandrel-wound preform rings in non-tangling package form, stress relieving to avoid dimension change in heating, wire size, use of flat wire rings and coined washers. A chart recommends ring type for a given joint design.

If you write maker identify as IEN - 6218

BROACHING . . Troubles and remedies are part of information given in new 80-page book

National Broach & Machine Co.
5602 St. Jean Ave., Detroit 13, Mich.

"Broaching Practice" is new book based on the company's experience. It is offered on letterhead request from qualified individuals in metal-working plants. It covers applications and limitations of broaching, design and manufacture, fixtures, handling and maintenance, machine setup, cutting fluids. Broaching troubles and remedies is typical.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6219

Sewall SPROCKETS Carried in Stock or made to order

Send For The Sewall Catalog listing all types of stock sprockets. Sewall roller chain sprockets are available for conveying and power transmission uses. We cut sprockets to order for any type of roller or silent chain. Large and small sizes . . . any material or quantity.

Also Manufacturers of SEWALL GEARS— Custom Made For Every Need

E. B. SEWALL MANUFACTURING CO.
711 Raymond Ave., St. Paul 14, Minn. • Prior 7721

If you write maker identify as IEN - 6220

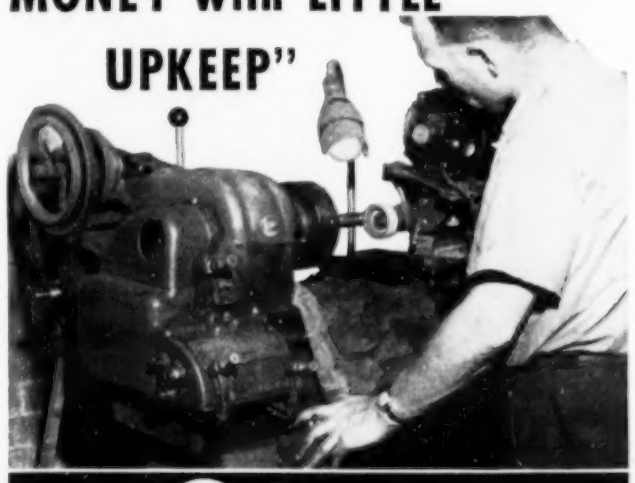
FOR BETTER HANDLING

Look under "Trucks" or "Casters" in your classified phone directory for your nearest Nutting representative. Or write direct for Junior Catalog 52G.

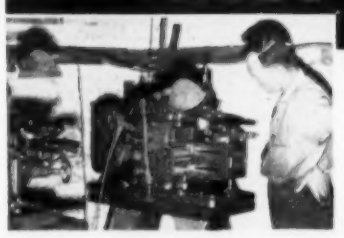
SINCE 1891 Nutting TRUCK & CASTER CO.
2014 Division St. Faribault, Minn.

If you write maker identify as IEN - 6221

"Atlas TOOLS HAVE MADE ME LOTS OF MONEY with LITTLE UPKEEP"



Atlas 10" QUICK CHANGE LATHE



The rugged, precision-built 7" shaper, and milling machine, are other Atlas tools that have made the J. H. Ferraby Machine Shop "lots of money with little upkeep." The Atlas shaper is the only precision 7" shaper equipped with Timken bearings. The Atlas miller is the lowest cost precision milling machine.

Low first cost . . . low upkeep . . . dependable precision . . . exceptional versatility . . . *everything* recommends the Atlas 10" lathe for outstanding service in tool room, machine shop, or maintenance, as the J. H. Ferraby Machine Shop, specializing in precision work, reports. Their Atlas "has not had $10 spent on it in five years."

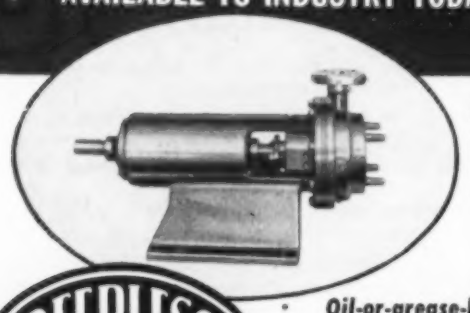
The Atlas precision-ground bed, rugged accurate construction, Timken bearings, 16 spindle speeds, instant selection of 54 threads or feeds, complete V-belt drive, are a few of the features that assure *top* efficiency. See all the features at your Atlas dealer's, or write for the latest catalog.

ATLAS PRESS CO.
607 N. PITCHER STREET
KALAMAZOO, MICHIGAN

Atlas DEPENDABLE QUALITY TOOLS SINCE 1911

If you write maker identify as IEN - 6223

THIS IS ONE OF THE TRULY ALL-PURPOSE CHEMICAL HANDLING PUMPS AVAILABLE TO INDUSTRY TODAY



PEERLESS TYPE DS CHEMICAL PROCESS PUMP

PEERLESS PUMPS

SOME TYPE DS CHARACTERISTICS:
OPEN OR ENCLOSED IMPELLER DESIGN • COMPLETE RANGE OF SIZES 1"-6" • HEADS—UP TO 231 FEET • LIQUID END CAN BE OF ANY ALLOY

Oil-or-grease-lubrication Rugged frame, case and liquid end

Write today for new Peerless Pump Bulletin No. B-1600. Completely describes the Type DS chemical process pump. Profusely illustrated with pump views, cutaway sections, elevations and dimensional data and performance characteristics.

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

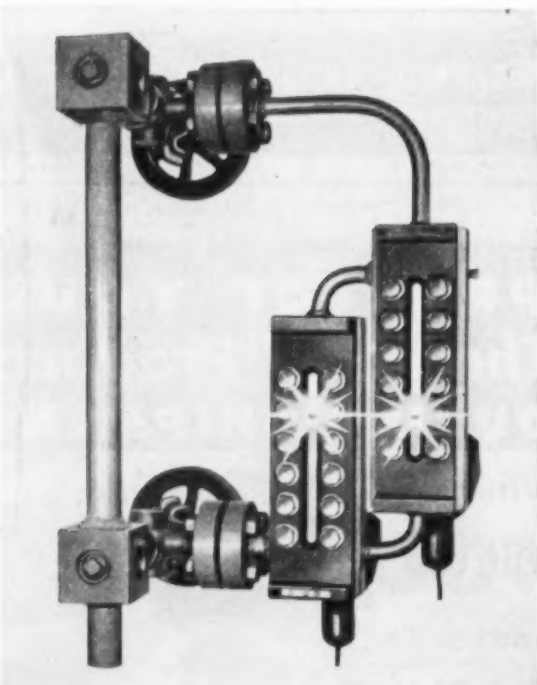
Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as IEN - 6224

THIS BOILER WATER LEVEL SHINES LIKE A STAR

Yarway Type "M" Illuminators on Yarway Flat Glass Gage inserts cause the meniscus at water level to "shine like a star." It literally dances before your eyes. The blue-green light is especially effective in penetrating deposits on gage glass, dust particles in the air and extraneous light.

Other new features of Yarway water gage assemblies give greater dependability, longer life and more accurate readings. These features include flexible "separated design" for wide visibility ranges, interconnecting expansion loops, short connections to the drum, Welbond gage valves and tie-bar-type water column to provide circulation . . . plus Yarway's pressure-sealed "floating assembly" gage glass inserts.



Yarway Water Column and Gage assemblies are also available in single insert types for medium range of visibilities, and for all pressures up to 2500 psi. Write for free Yarway Water Column and Gage Bulletin WG-1811.

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

YARWAY® water columns and gages

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 6226

CALENDAR . . Mid-year special, July 1953 to July 1954, with decimal equivalent chart

Dayton Rogers Mfg. Co.
2822-26 13th Ave. S., Minneapolis 7, Minn.

Letterhead request will bring you a copy of the company's decimal equivalent calendar chart. The calendar part will see you through June 1954. It is located at the bottom of the 8½ by 10½-in. chart, can be detached when obsolete.

If you write maker identify as IEN - 6227

CASTINGS . . Technical article reprint on properties, design, production of steel castings

Steel Founder's Society of America
920-A Midland Bldg., Cleveland 15, Ohio

Background information to acquaint you with steel castings as an engineering material is given in new 16-page reprint bulletin, "Carbon and Low Alloy Steel Castings." Subjects are properties, types, specifications, design suggestions, foundry practice, heat treating, inspection.

If you write maker identify as IEN - 6228

CONTROLS . . Design of push-pull controls is described in new four-page reprint of a technical article

Simmonds Aerocessories Inc.
103-7 White Plains Road, Tarrytown, N. Y.

Folder AD-335 gives instructions on "How to Design Push-Pull Control Systems" based on the company's guided flexible shaft inside a rigid housing. It presents drawings and tables on a unit with a flexible ferrule at the adjustable end and on one with a rigid casing and thrust collar at the fixed end.

If you write maker identify as IEN - 6229

CONVEYOR BELTS . . Instruction manual on care, maintenance and installation of these belts

B. F. Goodrich Co.
448-52 S. Main St., Akron 11, Ohio

Why it pays to care for belts is the first subject treated in new 32-page Manual A-138. It describes how to make belt run straight, how to space idlers, belt cleaning, aids to long life, belt repairing, installation, elevator belts, how to minimize effects of moisture, light, heat.

If you write maker identify as IEN - 6230

DRIVES . . Design possibilities are stressed in application bulletins on electric brakes and clutches

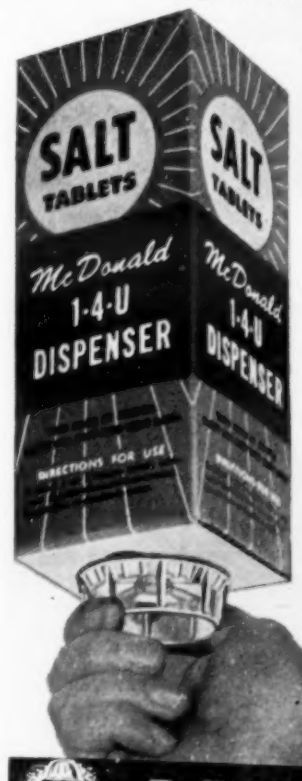
Warner Electric Brake & Clutch Co.
P. O. Box 618-A, Beloit, Wis.

"Human Aspects of Machine Design" is the latest in a series of 4-page application bulletins dealing with equipment design from the standpoint of electric brakes and clutches. This one tells how eight drum motors in a sanding machine are stopped if the sandpaper breaks, and how one pushbutton stops all drums in less than two revolutions. The title comes from a statement on the subject by a guest editor.

Previous bulletins in the series include "Automation," "Modernization in the Textile Industry," "Preventive Maintenance in the Factory of the Future." Each describes how electric brakes and clutches have been applied in equipment design. The company will send you a set of the bulletins.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6231



WHEN heat IS OPPRESSIVE

Workers feel better, work better if they take McDonald 1-4-U Salt Tablets. Handy throw-away cartons dispense 1000 or 500 tablets. Three types of tablets—impregnated to prevent nausea; salt plus dextrose; and plain.

WRITE FOR BULLETIN AND PRICES

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as IEN - 6232

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as IEN - 6233

"TOM: — IN THE FIRST YEAR AFTER WE CHANGED OUR PLANT TO FUSETRON FUSES, WE ENTIRELY ELIMINATED MOTOR BURNOUTS FROM SINGLE PHASING AND REDUCED ALL MOTOR BURNOUT BY AT LEAST 75%"

Excerpt from a conversation of Forrest Baumgardner with Tom Wier

"FOREST: — DON'T FORGET FUSETRON FUSES DO MORE THAN PROTECT MOTORS — THEY PROVIDE 10 POINT PROTECTION!"

1 Protect against short-circuits.
2 Protect against needless blows caused by harmless overloads.
3 Protect against needless blows caused by excessive heating—lesser resistance results in much cooler operation.
4 Provide thermal protection — for panels and switches against damage from heating due to poor contact.
5 Protect motors against burnout from overloading.
6 Protect motors against burnout due to single phasing.
7 Give DOUBLE burnout protection to large motors — without extra cost.
8 Make protection of small motors simple and inexpensive.
9 Protect against waste of space and money — permit use of proper size switches and panels.
10 Protect coils, transformers and solenoids against burnout.

Don't Risk Losses!
One **lost** motor . . .
One **needless** shutdown . . .
One **destroyed** switch or panel
One **burned out** solenoid . . .
May cost you far more than replacing every ordinary fuse with a Fusetron dual-element Fuse.

FUSETRON
TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION
BUSS

BUSSMANN MFG. CO. University at Jefferson
ST. LOUIS 7, MO. (Division McGraw Electric Co.)

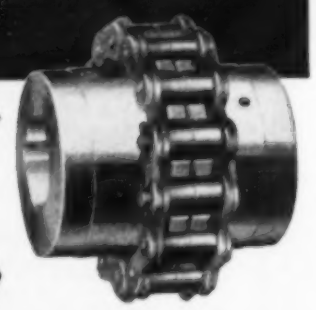
If you write maker identify as IEN - 6235

Only LINK-BELT "RC" Flexible Couplings give all 3 advantages at low cost

1 Equalized load

2 Proper balance at high speeds

3 Effective compensation for end float and misalignment



Link-Belt's exclusive design makes the difference. The simplicity of single-width chain is combined with divided rollers to give you top performance—plus economy. Specify Link-Belt Roller Chain Couplings for any rating from fractional to 1000 hp. Get all the facts from your Link-Belt representative or distributor, or write for Folder 2363. 13.210

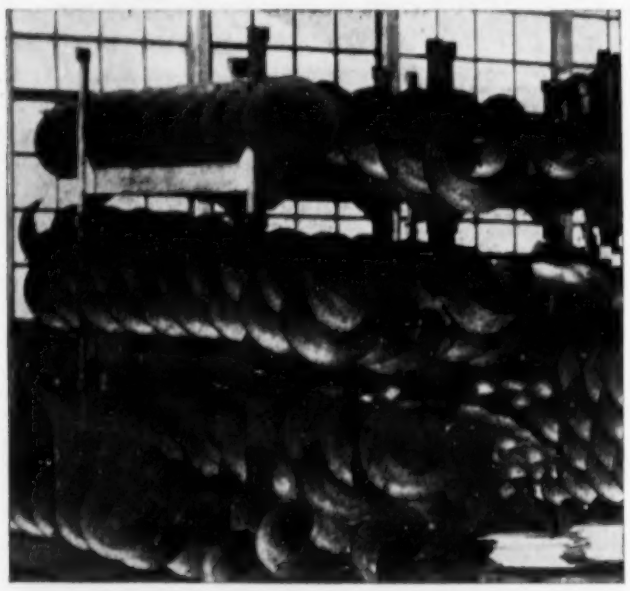
LINK-BELT

"RC" Flexible Couplings

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (S. Africa), Sydney (Australia). Sales Offices, Factory Branch Stores, Distributors in Principal Cities.

If you write maker identify as IEN - 6236

SPIRAL FLIGHTS



THE JEFFREY MANUFACTURING CO. Columbus 16, Ohio

IF IT'S MINED, PROCESSED OR MOVED ...IT'S A JOB FOR JEFFREY!

sales offices and distributors in principal cities

If you write maker identify as IEN - 6237

WASHERS and STAMPINGS Geared to Industry's Production Demands Since 1887

Over a period of 65 years, producing standard and special washers of all types for all industries, we have made up more than 25,000 sets of dies . . . used in the production of washers which are stocked in thousands of different sizes. On special orders we will make up dies to your specifications.

Let us quote on your requirements for washers and stampings . . . covering fabrication in any material and any finish . . . machined, heat-treated or surface ground, as may be specified.

WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2297 S. BAY ST., MILWAUKEE 7, WIS.

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN - 6238

DRYING . . How spray drying works is described in new booklet with products handled

Bowen Engineering Co.
102 Station Road, North Branch, N. J.

Simple sketches and non-technical text tell what spray drying is, why use spray drying, what is spray dried, in new 16-page booklet. Title is "The Bowen Story of Spray Drying." The description also tells how a spray dryer works, atomization, the drying process, recovering the product.

If you write maker identify as IEN - 6239

HYDRAULIC DRIVES . . Drawings and data on large oil hydraulic pumps and motors in catalog

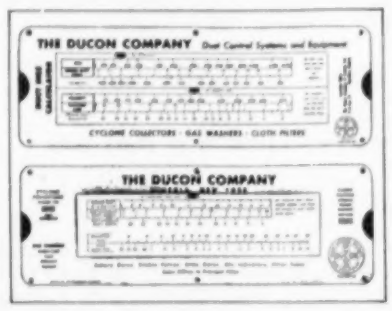
Waterbury Tool Div., Vickers Inc.
189-90 E. Aurora St., Waterbury 20, Conn.

Capacity range in 10 sizes is 28 to 2,300 gpm. for the hydraulic pumps and motors shown in new 19-sheet loose-leaf "Engineering Data." The information covers performance, overall dimensions and connections on the company's Heavy Duty Series. They are for machine tools, test units.

If you write maker identify as IEN - 6240

DUST COLLECTING . . Cardboard slide calculator to determine duct size, friction loss, diameter, area

Ducon Co.
155-59 E. 2nd St., Mineola, N. Y.



Duct Size Calculator is new 9½ by 3¼-in. unit which the company offers on request to assist in figuring dust-collector, air filter, gas-washer and other problems. The front has two sets of scales. One is set to cfm. of flow to read duct diameter for a given velocity. The second reads friction loss per 100 ft. for a given duct size and air velocity.

On the back are two scales. The first is variable to convert round duct diameter to rectangular duct width for a given depth. The second is fixed. It converts diameter to area.

If you write maker identify as IEN - 6241

ENGINEERING . . Directory of 144 pages on consulting services in the chemical engineering field

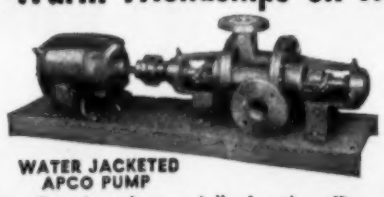
Association of Consulting Chemists & Chemical Engineers
50 E. 41st St., New York 17, N. Y.

Silver Anniversary issue of "Consulting Services" lists member firms in four ways. One is by field from Abrasives to Zinc Rolling. The second is by scope, detailing qualifications and activities. The third is by unusual equipment owned. The fourth is an alphabetical and geographical index. Single copies are available upon written request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6242

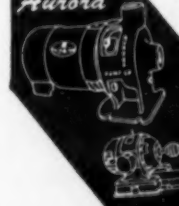
Making Warm Friendships on Hot Jobs



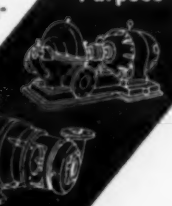
WATER JACKETED APCO PUMP

Developed especially for the efficient handling of high temperature and highly volatile liquids. Delivers outstanding performance. Unbeatable on high head, small capacity duties.

PUMPS "by Aurora"



For Every Purpose



APCO Turbine-Type PUMPS —ideal for "1001" duties where small capacities and high heads predominate. Get acquainted.

AURORA CENTRIFUGAL PUMPS are available in many types and sizes—all noted for their streamline coordination between impellers and shells.

Write for CONDENSED CATALOG "M"

We Invite Your Special Pump Problems

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA always PUMPS

AURORA PUMP COMPANY

SUBSIDIARY OF THE NEW YORK AIR BRAKE COMPANY
52 Loucks Street • Aurora, Illinois

If you write maker identify as IEN - 6243

INDIVIDUAL VULCANAIRE DUST COLLECTING UNITS

Are used on surface and other grinders where grinding dust must be removed.

Inexpensive, compact units, with no moving parts. Operated from your present air supply.

Installed in a few minutes, eliminating need for costly centrally located dust collecting systems.

The collector element is mounted on the side of the machine. Quickly cleaned, requiring no refills.

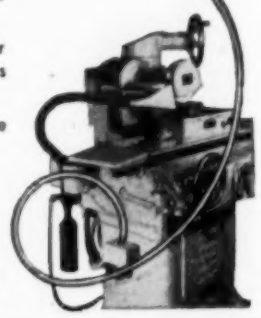
Vac-suction pick-up device (vacuum nozzle) is mounted on the grinding wheel guard or close to grinding wheel on other applications. This mounting permits constant contact with dust as the wheel is moved up or down.

A simple needle valve operates the unit, and can be shut off whenever the machine is not in use.

Available in two sizes: 700 series for grinding wheels 7" dia. or less—200 series for wheels 2" dia. or less.

Made by the makers of Vulcanaire *The* jig grinding attachment.

Write on your letterhead for "Dust Collector" Booklet.



VULCAN TOOL CO.
734 LORAIN ST., DAYTON 10, OHIO

If you write maker identify as IEN - 6244

TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants

How it works to—

Record each employee's tools or gages, preventing theft and loss;

Recover idle tools;

Cut crib inventories;

Reduce tool breakage;

Locate each tool, loaned or in crib;

Eliminate delays, saving man and machine time;

Stop arguments and otherwise speed service;

With no increase in crib personnel—

All described in Folder A-510 IEN

Procedure readily adapted to control of gages, tool kits, and unusual requirements

Write for your copy today to:

THE McCASKEY REGISTER COMPANY • ALLIANCE, OHIO

McCASKEY INDUSTRIAL CONTROLS

PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

If you write maker identify as IEN - 6245

PROTECT YOUR *Threaded Products* DURING SHIPMENT

with Uni-CAPS and Uni-PLUGS

Plugs can be furnished in Tenite #2 or Tenite #1 or special snap caps and plugs from Polyethylene

Send specifications on sizes desired and monthly production requirements.

FAST DELIVERY ON STANDARD SIZES

UNITED *Plastic* INDUSTRIES INCORPORATED

CUSTOM MOLDED PLASTICS

53 Brown St. Vassar, Mich.

If you write maker identify as IEN - 6246

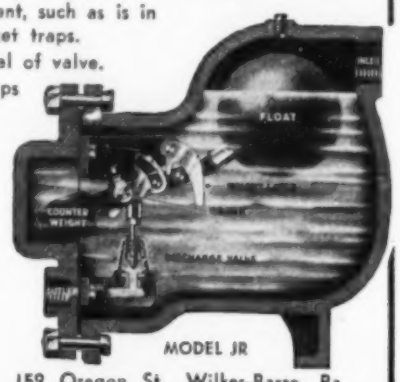
Solve Sludge Problem with Nicholson's *New* AIR TRAPS

With the introduction of an exclusive new oil-eliminating feature that prevents build-up of scum and sludge, Nicholson air traps now enable you to enjoy the advantages of the positive intermittent action of a float-operated air trap without the common problem of oil congealing on the mechanism and impeding or stopping its action. Other features of Nicholson air traps:

1) No air-wasting vent, such as is in all inverted bucket traps.
2) Positive water seal of valve.
3) Large orifice keeps valve clean, preventing blow-through.

Three types; pressures to 1500 lbs. For details send for

CATALOG 751

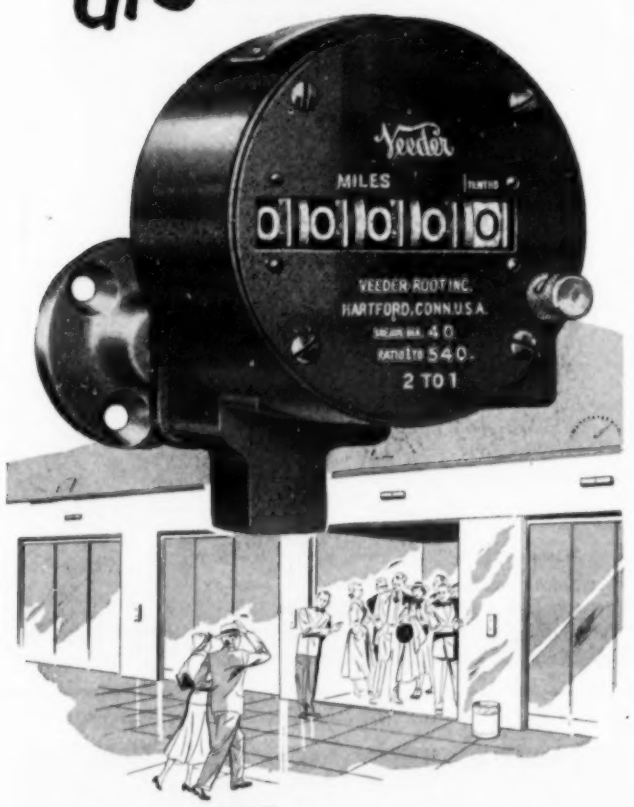


159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as IEN - 6247

It counts your "UPS and DOWNS"



Added Evidence that—

Everyone Can Count on VEEDER-ROOT

Elevator Mileage Recorders give accurate figures on vertical miles . . . so that it can be plainly seen...*in advance*...when it's time to replace cables, overhaul cars, motors, and what have *you . . . including your life.*

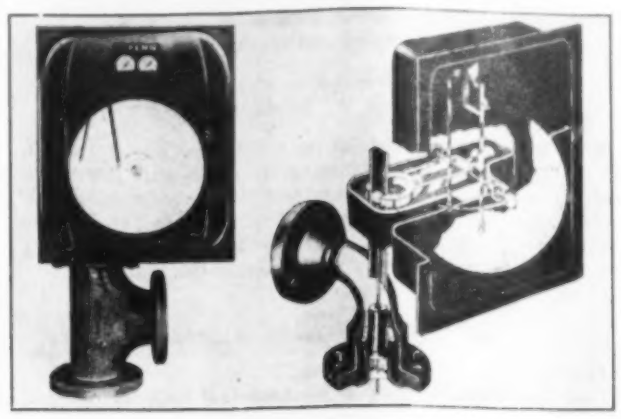
Yes, the V-R wheelmark monogram protects millions of people daily, from the depths of the sea to the stratosphere. Of course, not all V-R Products and services are available nowadays . . . but if your work counts importantly in defense, then you can count on Veeder-Root to help you, as soon as rush commitments permit.

VEEDER-ROOT INCORPORATED
HARTFORD 2, CONN.

If you write maker identify as IEN - 6249

CONTROL . . Variable area flow meter combined with pneumatic transmitter

Source: PENN INDUSTRIAL INSTRUMENT CORP.
4108-12 Haverford Ave., Philadelphia 4, Pa.



Illustrated in Catalog 650

Pneumatic transmitter is now available in built-in assembly with the Linameter variable area flow meter. It supplies output air pressure in a proportional range between 3 and 15 pounds. This pressure can be employed to actuate indicating, recording, integrating and control instruments for flow regulation of air, oil, steam, water, corrosive fluids, pulps and slurries, viscous liquids, tars, in large or small flow volumes as encountered.

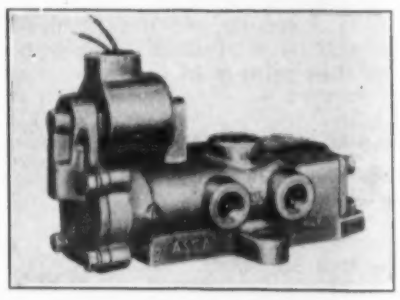
The float in the meter mechanism rides in a cone shaped orifice in the flow line to move a rod carrying a magnetic stainless steel ball up and down inside a closed tube. A balanced U-shaped follower, outside the tube, is locked magnetically to the ball to move with it and operate the meter mechanism. Since there is no mechanical connection there is no need for packing with its resultant friction. Also there is no possibility for leakage from the flow line.

The meter movements actuate the pneumatic transmitter which takes its air supply from a 20-lb. line and delivers control air in the proportional 3 to 15-lb. range.

If you write maker identify as IEN - 6250

VALVE . . Four-way design, solenoid operated for air or liquid

Source: AUTOMATIC SWITCH CO.
497-D Lakeside Ave., Orange, N. J.

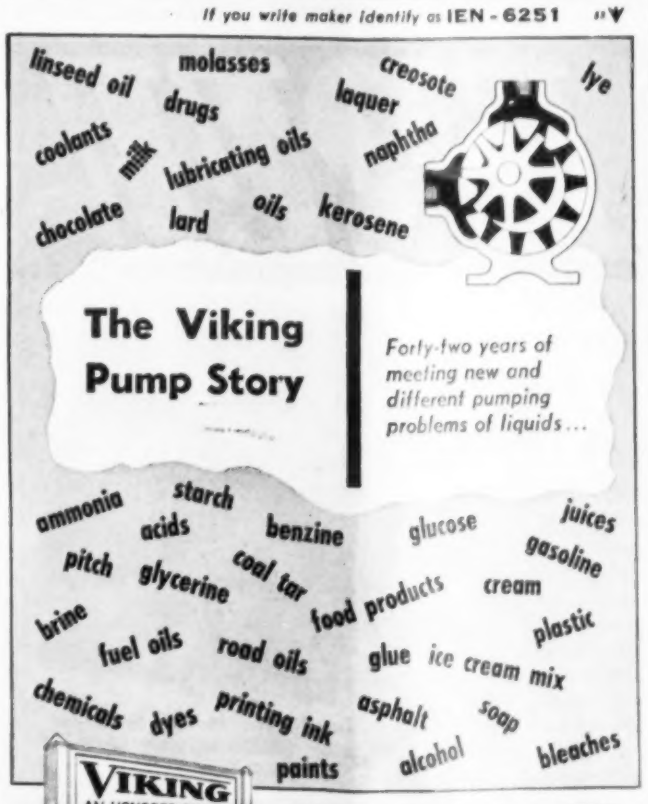


Pressure to 125 pounds

Four sizes, with ⅜ to 1-in. pipe connections, are included in this new bronze body valve. It is equipped with stainless steel seats and discs and with a solenoid for operation to 750 cpm. on intermittent duty or 500 cpm. on continuous duty. Operation can be changed from 4 to 5 way by replacing a rear plate. The solenoid is water-tight explosion-proof construction in standard design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6251



What are your problems? Send them in TODAY and ask for folder 535F

See Our Catalog In SWEETS

Viking PUMP COMPANY
Cedar Falls, Iowa

If you write maker identify as IEN - 6252

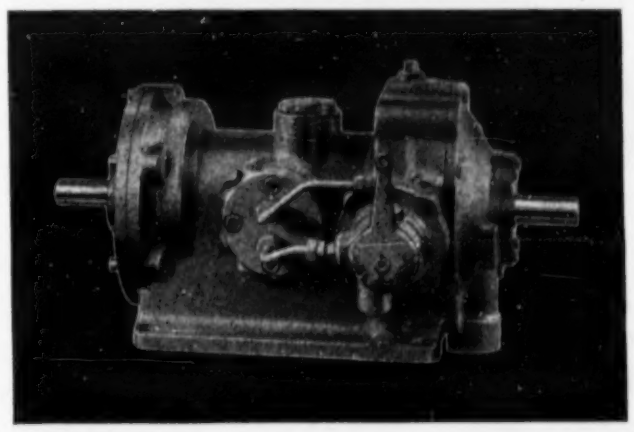
—Wherever you need them!

STACKBIN® sections will give you a stockroom wherever you want it—quickly and easily as building a sectional book case. These patented sectional storage bins nest together without the use of tools—cost you nothing to build, nothing to move. Find out today how STACKBINS can lower YOUR handling costs.

IMMEDIATE SHIPMENT
Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa
Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 6253

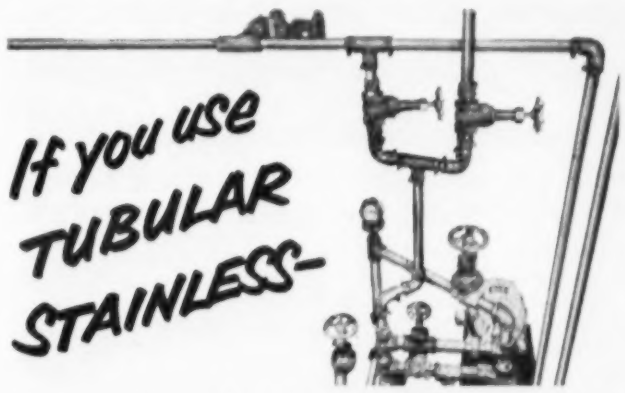


ANY-SPEED OILGEAR FLUID POWER TRANSMISSION Solves drive problems —Improves machine performance

Even machines that lead their fields have benefited greatly by a change to the *ANY-SPEED* Oilgear Fluid Power Transmission . . . simply because top machine performance often depends on a speed flexibility other drives just don't have. The *Any-Speed* Oilgear is *just that*—from zero to 1600 r.p.m. And once you pick your best speed it stays there . . . or until you want to change. Smooth shading of speed all the way up or down. Full control manually, hydro-electrically, pushbutton or automatic remote. Small, durable, dependable, this "power package" installs easily, ends drive trouble, saves power, cuts maintenance to a sliver. Simple, accessible design. Drives off any constant speed source. Write for descriptive Bulletin 67110A. THE OILGEAR COMPANY, 1567 West Pierce St., Milwaukee 4, Wis

If you write maker identify as IEN - 6254

If you use TUBULAR STAINLESS—



WHETHER you process chemicals . . . pharmaceuticals . . . or use tubular stainless in your product . . . you'll find your every stainless tube or piping need in Frasse warehouse stock.

Pipe and tube, both seamless and welded, are carried in a complete range of sizes. Pipe is available in schedules 5, 10, 40 and 80. Valves, a complete assortment of threaded fittings—as well as the new threadless "Quikupl"—are equally handy from one convenient source—Frasse.

It's easier to work from complete Frasse stocks—gets the job done quicker too! For your tubular stainless—call Frasse first. Our latest inventory of stainless tube, pipe and fittings is available on request. Send for your copy today.

Call FRASSE 1st for STAINLESS STEEL PIPE · TUBE · VALVES · FITTINGS

Peter A. FRASSE and Co., Inc.
17 Grand Street, New York 13, N. Y.
Lyndhurst · Philadelphia · Buffalo · Syracuse

If you write maker identify as IEN - 6255

standard stock size
JOHNSON GP BEARINGS
save you money

There are over 900 sizes, 213 different ID-OD combinations, available from your local Johnson Distributor. Johnson GP (General Purpose) Cast Bronze Bearings will meet over 90% of your sleeve bearing needs and will save you time and money. The cost is extremely low. Ask your distributor for the new Johnson Bearing Catalog or write us.

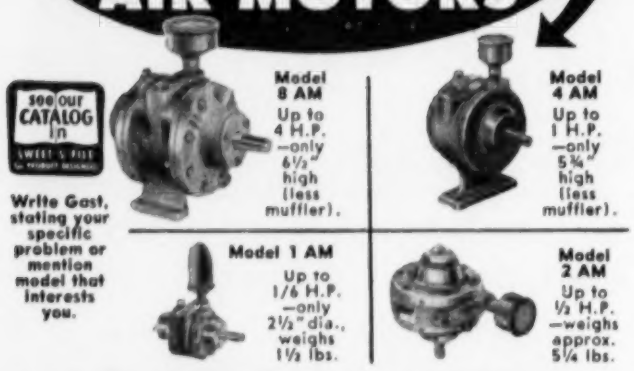
JOHNSON BRONZE CO., 476 S. Mill St., New Castle, Pa.

JOHNSON JB BEARINGS
Sleeve-Type

SLEEVE BEARING HEADQUARTERS Since 1901

If you write maker identify as IEN - 6256

Get astonishing POWER and other unique advantages with GAST rotary AIR MOTORS



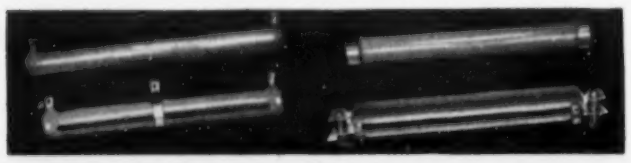
Write Gast, stating your specific problem or mention model that interests you.

FOR YOUR ORIGINAL EQUIPMENT APPLICATIONS . . .
Gast rotary-vane Air Motors may solve tough problems on **your** product! They're lower in first cost, variable in speed, explosion-proof, quick starting, **amazingly** compact and light compared to electric motors.
Four sizes available, reversible and non-reversible ball bearing types, several mounting styles, speeds to 12,000 RPM. Numerous accessories. "Air may be your Answer!"

Original Equipment Manufacturers for over 25 years

GAST ROTARY AIR MOTORS · COMPRESSORS · VACUUM PUMPS
(TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Hinkley St., Benton Harbor, Mich.

If you write maker identify as IEN - 6257



TWO YEARS FIELD EXPERIENCE WINS TITLE . . . "H-H LONG-LIFE RESISTORS"

The greatly increased protection made possible by the development of our *high-temperature* gray enamel is the most important improvement of these resistors, but it is not all. True, this enamel is thermo-shock-proof and crazeless; but in addition

THESE RESISTORS OFFER . . .

- Stronger core with higher resistance to vibration and shock.
- Finer resistance wire—made to H-H specifications, especially adapted to these resistors. More uniformly wound, so that failures under stress are eliminated.
- Special alloy terminals more securely fastened to the ceramic body by spot-welding—highly resistant to corrosion.
- All wire connections are protected by a positive non-corrosive bonding.

The fixed, the ferrule and the flat types are especially designed for and manufactured in accordance with JAN-R-26A specifications.

Rheostats and Resistors HARDWICK, HINDLE, INC.
Subsidiary of THE NATIONAL LOCK WASHER COMPANY
Established 1886
Newark 5, N. J. U. S. A.
the mark of quality
for more than a quarter of a century

Hardwick, Hindle, Inc., 40 Hermon St., Newark 5, N. J.
Please send additional information about your new resistors and rheostats.
Name_____
Title_____
Company_____
Address_____

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 6258

ENGINEERING . . School offers catalog of 18 courses in electrical and mechanical engineering

Milwaukee School of Engineering
1023-27 N. Milwaukee St., Milwaukee 2, Wis.

Fiftieth Anniversary Catalog is a 160-page publication on the school's facilities for training in radio and television, electrical service, electronics and electrical engineering, mechanical technician and mechanical engineering. It stresses a combination of practical training with school work, shows how the school works closely with Milwaukee industry.

If you write maker identify as IEN - 6259

FILTERING . . Application bulletins on continuous filtration of machine-tool coolants

U. S. Hoffman Machinery Corp.
221 Lamson St., Syracuse 6, N. Y.

New series of application "Case Study" bulletins is announced by the company's Industrial Filtration Division. The first describes a 200-gpm. central system to clean up cutting oil for automatic screw machines. The second is a flotation setup for clarifying soluble coolant. Your name will be added to the mailing list upon request.

If you write maker identify as IEN - 6260

HEATING ELEMENTS . . Sound color movie shows how electric heat is used in industrial processes

Edwin L. Wiegand Co.
7505 Thomas Blvd., Pittsburgh 8, Pa.

"This Amazing Heat" is new 16-mm 24-min. Kodachrome film which the company is making available for industrial group showings. It tells how resistance-type electric heating elements are used in a variety of industrial work, illustrates the forms in which they are supplied, consumer applications.

If you write maker identify as IEN - 6261

MANAGEMENT . . Survey on pension plans of under 100 employees is summarized in new report

Employee Benefit Plan Review
164-68 W. Jackson Blvd., Chicago 4, Ill.

About 120 methods of determining retirement income are used in the 317 pension plans of smaller employers summarized in new 18-page report. Title is "Pension Plans with less than 100 Participants." List price is $5.

If you write maker identify as IEN - 6262

MANAGEMENT . . Methods of valuation for industrial property are described by new textbook

McGraw-Hill Book Co.
330 W. 42nd St., New York 36, N. Y.

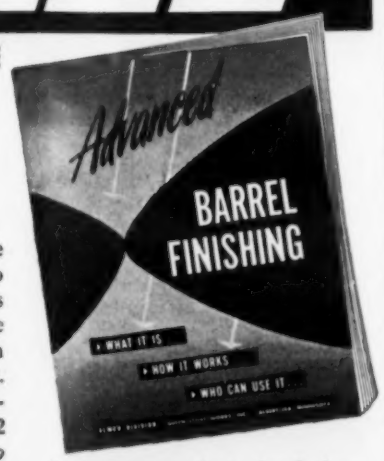
How to appraise an industrial property is subject of new 524-page "Engineering Valuation and Depreciation" by Marston, Winfrey and Hempstead. List price is $8. The book covers methods and background for physical properties, land, working capital and intangibles of an industrial enterprise.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6263

FREE

IF YOU PRODUCE PARTS THAT REQUIRE FINISHING OF ANY KIND



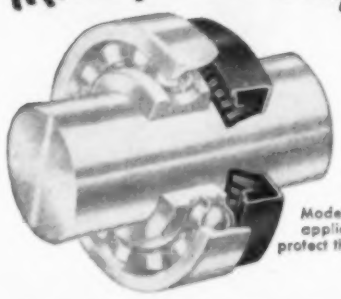
This amazing 22-page booklet is *guaranteed* to open your eyes! Gives latest, up-to-the-minute facts—figures—photos on advanced barrel finishing. Shows how single unit installation replaces from 2 to 12 men—*savings up to 95%* on almost all types of parts from large castings to small intricate parts.

Investigate today! Send for your FREE copy of Booklet No. G-6 today.

ALMCO Supersheen
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as IEN - 6264

Best Bearing Protection Money Can Buy!



Model 53 KLOZURE* applied to a shaft to protect the ball bearing.

DEPENDABLE KLOZURE Oil Seals provide *positive* protection on costly bearing installations. That's why many manufacturers of machine tools, gears, speed reducers, and other equipment have standardized on Garlock KLOZURES.
The standard sealing element is made of a synthetic rubber compound that is oil-resistant, non-porous, non-abrasive. Special elements, such as "Teflon" for strong acids and silicone rubber for extreme heat, are available. The metal cases are precision die-stamped.
These superior oil seals are made in a complete range of sizes and in many models.
Write for KLOZURE Catalog No. 10.

THE GARLOCK PACKING COMPANY
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.

GARLOCK Klozure* Oil Seals
*Registered Trademark FOR ALL TYPES OF BEARINGS

If you write maker identify as IEN - 6265

The New Super-Hard Carbide Drill

Up to 200% Greater Life

A Better Drill For Hardened Steel

Long carbide end keeps cutting heat away from braze.

Write for Catalog Supplement No. 4

QUALITY CARBIDE TOOLS

Super TOOL COMPANY

21650 Hoover Rd., Detroit 13 · 5210 San Fernando Rd., Glendale 3

If you write maker identify as IEN - 6266

"PRESSURE OR VACUUM?"

Johnson FLEXIBLE SEAMLESS METAL HOSE

FOR CONVEYING UNDER PRESSURE OR VACUUM
STEAM · OIL · WATER · GAS · REFRIGERANTS

MANUFACTURED FROM SEAMLESS TUBING WITHOUT JOINTS, WELDS OR PACKING, WITH HEATPROOF FITTINGS ATTACHED · *FOR HOT OR COLD APPLICATIONS*

WRITE FOR BULLETIN J-3

JOHNSON METAL HOSE, INC.
P. O. BOX 952 · WATERBURY 20, CONN.

If you write maker identify as IEN - 6267

PORTABLE!
PRACTICAL!
PROFITABLE!

Union Special SUSPENDED HEAD BAG CLOSING MACHINES

Portability, versatility, and simplicity of operation make Union Special Suspended Head Machines ideal for all-around bag closing operations in small plants, and well-suited for utility or stand-by duty in large plants. Users have found that machines can be used to produce neat, strong closures on virtually all types of paper or cloth bags. Initial cost is low; installation is simple and inexpensive. You can hang them up any place and go to work!

Send for this NEW BULLETIN!

Get your copy of Bulletin No. 200 containing illustrations and helpful data charts for the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE CO., 410 N. Franklin St., Chicago 10, Ill.

If you write maker identify as IEN - 6268

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 6270

DRIVE . . Variable speed control for small dc. motor from an ac. line

Source: GERALD K. HELLER CO.
1536 Ridgely St., Baltimore 30, Md.

$105 without motor

Type C-25 is a new electronic stepless variable speed control, similar to the Type 6T60-20, previously described IEN-7992-50. The new unit is suited for operation of a dc. shunt-wound motor rating 1/50 to 1/4 hp. at 110 volts from an input circuit rating 110 volt 60 cycle ac. The control employs a half-wave thyratron rectifier circuit, to feed the motor armature, and a selenium rectifier for the motor field circuit.

A knob at the front of the housing permits speed selection in the overall range between 50 and 2,400 rpm. A reversing switch is positioned for desired rotation. Housing dimensions are 7 by 7 by 9 inches.

If you write maker identify as IEN - 6271

NAMEPLATE . . Decalcomania bakes permanently on metal or enamel

Source: AMERICAN DECALCOMANIA CO.
4342-46 W. Fifth Ave., Chicago 24, Ill.

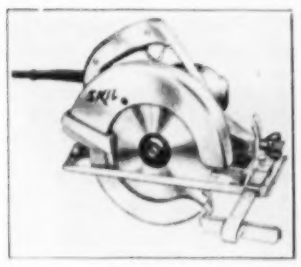
No clean up is required

Durable marking that appears as an integral part of a metal or enamel surface is produced by application of the new Perma-Cal decalcomania. It is available in closed type or in open lettering, with specified design and size, for solution or water application on the surface. This is followed by baking for 10 min. at about 280 deg. F. Under certain favorable conditions, the decalcomania can be applied and baked at the same time the product is being finished.

If you write maker identify as IEN - 6272

WOODWORKING . . Portable saw, universal motor, takes 7¼ in. blade

Source: SKIL CORP.
5039 Elston Ave., Chicago 30, Ill.



For construction

Model 687 is a new portable electric saw weighing 13¼ pounds. It will cut through 2-in. dressed lumber at 45 deg. or square across 2-in. rough lumber. Spindle operation is at 5,000 rpm. The saw is adjustable for depth of cut from 1/16 to 2⅜ in. and for any angle between square and 45 degrees. Construction includes a universal motor, ball and needle roller bearings, an overhead type handle for one-hand control, a built-in rip fence and a telescoping blade guard.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6273

SPEEDY AIR VISE

SPEEDS UP
✓ MILLING ✓ PUNCHING
✓ DRILLING ✓ BENDING
✓ TAPPING ✓ RIVETING

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings . . . . . only **$36.00**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN - 6274

MACHINE DESIGNERS!

GET THE FULL STORY ON HANNIFIN'S

NEW *Pilot-Master* Air Control Valves!

HERE'S WHY MAINTENANCE MEN PREFER THEM . . .

FEWER VALVES TO STOCK
Use same valve 2-way or 3-way, normally open or normally closed.

FEWER PARTS TO STOCK
Unique cartridge construction makes "insides" easily replaceable.

INDUSTRIAL SOLENOIDS
Long-lasting, easy to change coils to any standard voltage.

¼", ⅜", ½", ¾", 1", 1¼" Sizes; Pressures to 150 p.s.i.
Write for Bulletin 231 and get the complete story!

HANNIFIN

Hannifin Corporation • 1107 S. Kilbourn Ave. • Chicago 24, Ill.
Air and Hydraulic Cylinders • Presses • Air Control Valves

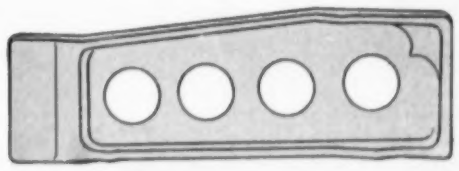
If you write maker identify as IEN - 6275

MUELLER BRASS CO.

ALUMINUM FORGINGS

- STRONG AS STEEL BUT 1/3 THE WEIGHT.
- GOOD DIMENSIONAL STABILITY . . . MECHANICAL PROPERTIES RETAINED AT HIGH SPEEDS AND REASONABLE TEMPERATURES.
- REQUIRE LESS MACHINING AND FINISHING.
- FORGED TO YOUR SPECIFICATIONS.

MUELLER BRASS CO. • PORT HURON 26, MICHIGAN



102

If you write maker identify as IEN - 6276

NEW CLEANER Does the Work of 3

IDEAL BLO-R-VAC

A "Tank-Type" Cleaner
A "Hand-Type" Cleaner
A Blower-Sprayer
. . . All In One Unit!

More for your cleaner dollar with this ALL-NEW, low-cost, multi-purpose unit! As a "tank-type" cleaner it vacuums lint, dirt, dust, scrap metal and *picks up water.* Has strong dust-tight bag and 12-gallon steel tank. Power unit can be removed in a jiffy for use as a blower, a sprayer . . . or a hand-type vacuum cleaner! Full selection of attachments available. Built to highest *industrial* standards. Two models —1-1/3 H.P. and 2/3 H.P.

TRY IT FREE

IDEAL INDUSTRIES, Inc.
1108 Park Avenue
Sycamore, Illinois

Arrange FREE DEMONSTRATION of your new BLO-R-VAC in our plant.

NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE____

SOLD THROUGH AMERICA'S LEADING DISTRIBUTORS

If you write maker identify as IEN - 6277

G-E Lightbeam Vibrometer Cuts Testing Time in Half

- Used to trace vibration in machinery, gears and buildings.
- Available with 15- or 30-mil scale range.
- Frequency range is 15-250 cps.
- High accuracy of ±3% full scale.

PRICE
$195.00*

Contact your nearest G-E sales office. General Electric Co., Schenectady, N. Y.

*Manufacturer's Suggested Price.

605-16

GENERAL ELECTRIC

If you write maker identify as IEN - 6278

"We've reduced our scrubbing time from 70 to 7 man-hours ... and our floors have never before been so clean!"

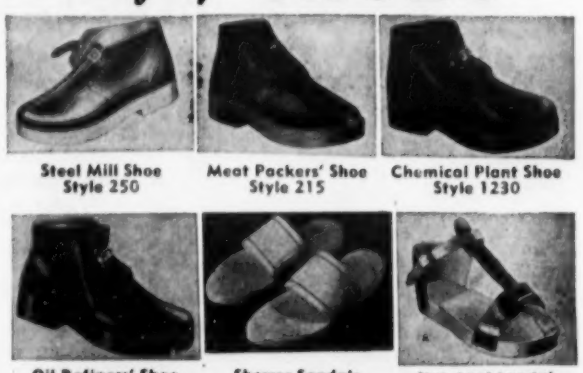
— Says foreman of BURNY BROS. BAKERY, CHICAGO

Burny Bros. garage and stockroom floors get daily scrubbing with a *Job-Fitted Combination Scrubber-Vac* and *Setol Cleanser. They're an unbeatable team* to speed the cleaning of oily, greasy floors. *Here's why:* A *Scrubber-Vac* applies the cleanser, scrubs, and picks up—*all in one operation! Job-fitted* to specific needs, the machine provides maximum brush coverage. Its teammate, *Setol Cleanser*, emulsifies grimy oil and grease *instantaneously* for fast, thorough removal by the machine's powerful vac. The *Scrubber-Vac* shown above, *Finnell's 213P*, cleans up to 8,750 sq. ft. per hour! For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2606 East St., Elkhart, Ind.

FINNELL SYSTEM, INC.
Originators of Power Scrubbing and Polishing Machines
50th Anniversary FINNELL
BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 6279

STAHMER
WOOD SOLE
Safety SHOES



Steel Mill Shoe Style 250 — Meat Packers' Shoe Style 215 — Chemical Plant Shoe Style 1230

Oil Refiners' Shoe Style 203 — Shower Sandals — Hot-Foot Sandal Fits over regular shoe

PROVIDE UNEQUALED PROTECTION

Stahmer Wood Sole Safety Shoes with genuine leather uppers are resistant to cold, heat, water, dust, oil and acid. Superior to leather and rubber in many industrial operations. Healthier employees. AVOID SLIPPING. They cost less and wear much longer. Sizes for men and women—5 to 12. Safety steel toe optional.

Send for catalog

STAHMER SHOE CO.
Established 1900 DAVENPORT 11, IOWA

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 6280

MANAGEMENT . . Book on cost accounting describes its functions, procedures, and reasons why

Ronald Press Co.
15 E. 26th St., New York 10, N. Y.

"Cost Accounting," new 742-page book that lists at $6, describes cost accounting as an aid to management in planning and in control of operating efficiency as well as the determination of profit and loss. The book gives specific procedures and examples, tells the reasons for recommended procedures, takes in job costs, standard costs, cost control.

If you write maker identify as IEN - 6281

MANAGEMENT . . Suggestions and menus in booklet on ready-to-eat meats for plant cafeteria

Transparent Package Co.
3518-22 S. Morgan St., Chicago 9, Ill.

Two sections comprise new booklet, "New Ideas for Efficient In-Plant Feeding." First is a 26-page section on ready-to-use meats and how to serve them in plant cafeterias and lunchrooms. These meats include sausage, frankfurters, bologna, meat loaf. Second is a set of 48 recipes on soups, sandwiches, entrees, salads. Suggestions include how to make meals nourishing and attractive.

If you write maker identify as IEN - 6282

MOTORS . . Scale drawings offered as tracing templates for company's Syncrogear motors

U. S. Electrical Motors Inc.
Box 2058-A, Terminal Annex, Los Angeles 54, Calif.

Each of 30 motors in the company's Syncrogear line is reproduced to six scales in new set of tracing templates offered on request to draftsmen, designers, engineers. The motors range from ⅓ to 30 hp. with speeds from 5 to 10,000 rpm. Scale size is 1/32 to ¼. The drawings are on 8½ by 11-in. sheets punched for a three-ring binder.

If you write maker identify as IEN - 6283

ELECTROSTATIC PAINTING . . Color sound movie describes product applications of company's equipment

Ransburg Electro-Coating Corp.
Sanders & Barth, Indianapolis 7, Ind.

"Miracles in Painting" is new 16-mm 25-min. color sound film on the company's No. 2 process of electrostatic painting. This process atomizes paint by electrostatic force, deposits it on the work by electrostatic attraction so there is no overspray. The film shows use from doorknobs to roof sheets.

If you write maker identify as IEN - 6284

PHOTOGRAPHING . . Use of flash lamps described in bulletin on battery-capacitor equipment

National Carbon Co.
30 E. 42nd St., Rm. 308, New York 17, N. Y.

Flash photography is the subject of revised 12-page Battery Engineering Bulletin No. 5. The bulletin reviews the photographic process in readily-understood manner, shows by diagrams how the four lamp types work, describes the problem of synchronization and five methods of solving it. It covers advantages of the battery-capacitor power supply.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6285

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG
eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼ to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's or centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carries hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works,** 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 6286

AA-267

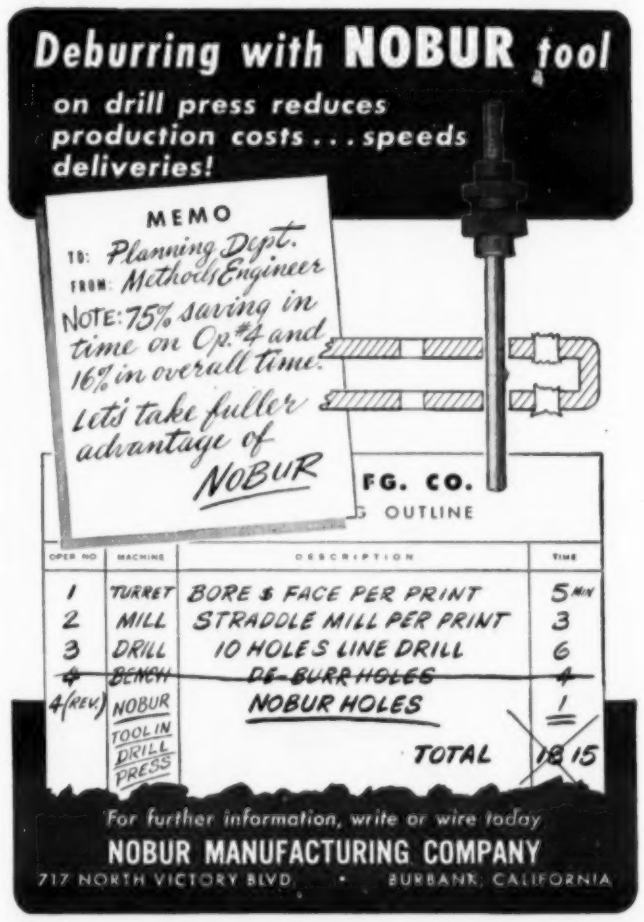
IF you sell your products in rolls (like adhesive tape), or—if you use rolls in production (like printing or coating) then—**better rolls can build your profits** by reducing waste, by increasing production and by improving your products. Get the facts on Camachine roll slitters and rewinders, the **right** model for every material. Write today to

CAMERON MACHINE COMPANY
61 Poplar Street • Brooklyn 1, N. Y.

Camachines

If you write maker identify as IEN - 6287

Deburring with NOBUR tool
on drill press reduces production costs . . . speeds deliveries!



For further information, write or wire today
NOBUR MANUFACTURING COMPANY
717 NORTH VICTORY BLVD. • BURBANK, CALIFORNIA

If you write maker identify as IEN - 6288

DON'T THROW AWAY YOUR OLD FILES!

Modern plant with facilities developed exclusively for RESHARPENING any make, length, shape and cut AMERICAN PATTERN, SWISS PATTERN and MILLED CURVED TOOTH FILES. Our workmanship is the finest quality and prompt service is guaranteed. Inspect our workmanship for yourself — send us sample files — we will RESHARPEN them free of charge.

Let us resharpen them at ⅓ the cost of a new file. No acid used.

WHARTON FILE CO., Inc.
234 West Central Avenue
WHARTON, N. J.

If you write maker identify as IEN - 6289

Now! Thread and Cut 4" Pipe in 44 Seconds with the New THRED-O-MATIC 44

No wrestling with stubborn chucks, no wrenches to worry about. Just push control button of Thred-O-Matic "44" and 4 jaws front and rear instantly and automatically grip, center and turn pipe.

Heavy duty, drive-all transmission has 2 speeds forward and reverse to give positive control of threading operation at all times. 4 high-speed dies in each quick-opening die head. Flat blade reamer attached to die head cleanly reams inside of pipe while threading.

Thred-O-Matic is powered with a 220-440 volt, 3 phase, 60 cycle 3 h.p. motor; magnetic switches assure overload protection. Thred-O-Matic is tops for removing tight fittings, handling smaller pipe, as well as assembling fittings. Because of its light weight (968 lbs.), it can be easily manhandled to the job in the field.

The THRED-O-MATIC "44" is a rugged production machine built and guaranteed by

QUIJADA TOOL DIVISION OF GAINES-COLLINS
5474 Alhambra Ave., Los Angeles 32, Calif.

Manufacturers of Automatic Threaders and Cutters for more than a Quarter Century

• Write today for new catalog IE-6

If you write maker identify as IEN - 6290

ELECTRIC FEEDRAIL® *Flexibility*

Simplifies Plant Problems

Feedrail system provides the power for a monorail hoist with slide switches and turntable in a sewerage disposal plant in Brooklyn, New York.

Feedrail is a flexible system of electrical distribution. It powers small or large hoists with equal ease. Mobile power trolley outlets supply power to crane or hoist. It's a simple problem to power a hoist on a curve, slide switch, transfer, turntable or spur run. Easily and quickly installed it provides a safe, dependable power source and requires little or no maintenance.

Feedrail offers new freedom in planning plant layout and production schedules. Trolleys roll smoothly within the enclosed track and current is immediately available where needed. Trolleys are added in a matter of minutes without shutting off the power to break "bottlenecks" at overloaded work centers. This flexibility is a vital factor in lowering costs and raising production volume.

Write for literature.

Sold by leading electrical distributors 46.D

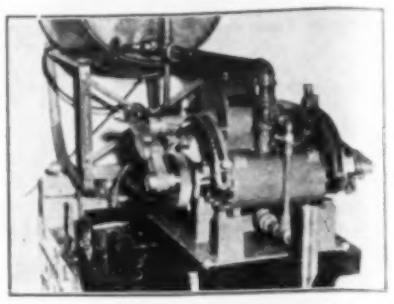
Never Becomes Obsolete
ELECTRIC FEEDRAIL
FEEDRAIL CORPORATION
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET • NEW YORK 7, N. Y.

SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as IEN - 6292

FEEDING . . Metering pump to measure out fluids, greases, waxes

Source: EDWARD E. ROBINSON INC.
93-97 Park Ave., Nutley 10, N. J.



Pressure to 200 pounds

Discharge rate, for this new Series-4100 metering pump, can be set in ¼-fluid-ounce steps from ¼ to 12½ ounces. Operating speed is to 60 ejections per minute. Delivery can be made into individual containers or into a conventional feed line. The pump represents further development of the smaller equipment, previously described IEN-12875-52. It is available to handle light or viscous fluids, cold, or with jacketing to heat and measure asphalts, resins, waxes.

Drive is by a 1-hp. motor, subject to specification for standard electrical characteristics. Feed is from a drum, tank or supply line. The delivery nozzle is non-drip design. Optional equipment includes a reset counter to permit as many as 400 ejections and then to open the motor circuit. The equipment is not recommended for abrasive materials.

If you write maker identify as IEN - 6293

FURNITURE . . Welded steel chair adjustable from 18 to 30 in. height

Source: SIMPLEX METAL PRODUCTS
343 W. 38th St., New York 18, N. Y.

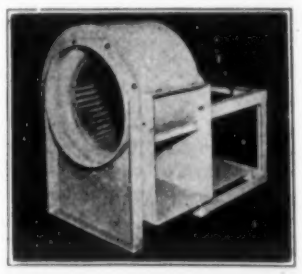
Specifications upon request

Square seat, made of varnished wood or Masonite, is mounted on a steel angle frame in welded assembly in this new adjustable chair. The corner angles are in two parts, adjustable for seat height between 18 and 30 inches. Feet are formed by bending the bottom of the angle legs. Casters can be specified. Three colors are red, green and blue. The adjustable back rest, that is part of the chair assembly, can be removed or omitted.

If you write maker identify as IEN - 6294

VENTILATING . . Centrifugal blower for exhaust duty, 200 to 2,200 cfm.

Source: BRUNDAGE CO.
560 N. Park St., Kalamazoo 11, Mich.



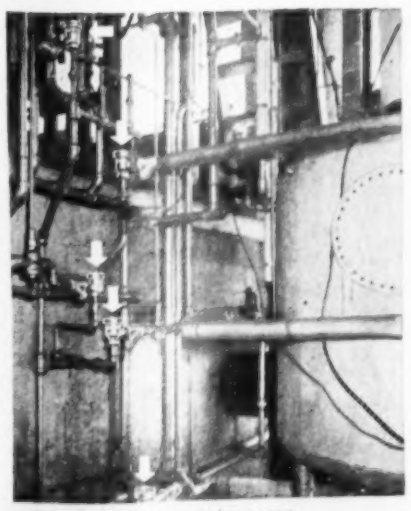
Ask for Bulletin 110A

Four sizes, with impeller diameter at 8⅛ to 16½ in. and width from 4 to 7½ in., are included in a new Series-S line of centrifugal blowers for direct or belt connected drive employing the user's motor. Overall dimensions are 17 to 29 in. in line with the shaft, 12½ to 26 in. from front to back, 15¼ to 32½ in. in height.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6295

Steam Trapping for Process Equipment



This still at Farmers' Chemical Laboratories, Kalamazoo, Mich. requires steam traps with the following characteristics: 1. Rapid air venting for quick starts from cold— 2. No adjustment or valve and seat changes are needed for different pressures — 3. As easy to install as a pipe fitting — 4. Small size, low first cost, minimum maintenance.

These are the characteristics which decided Mr. Paul H. Todd, owner, to use Sarco No. 9 balanced pressure thermostatic Steam Traps throughout his modern plant. He is well satisfied with the results.

For equal success in getting maximum efficiency from your steam heated process equipment, write for Bulletin 250-13 to **Sarco Company, Inc.** Empire State Bldg., New York 1, N. Y. There is no obligation. Advt. 608

If you write maker identify as IEN - 6296

MERCURY A-310 TRAILER

Corrugated box body

Steel dump body

Standardized for economy
Flexible for every need

Basic design, materials, fabrication of the A-310 Trailer have been standardized through years of rigorous testing under severe industrial service. Sizes, deck specifications, body types and superstructure are flexible to the requirements of each individual user. Wheel type and coupling system are optional. The result is the Mercury A-310 Trailer . . . standard of industry for efficient, low-cost, load carrying service. For complete details write for Bulletins 160 and A999.

MERCURY
FORK TRUCKS · TRACTORS · TRAILERS

MERCURY MANUFACTURING COMPANY
4132 So. Halsted St., Chicago 9, Ill.

If you write maker identify as IEN - 6297

If you write maker identify as IEN - 6298

for *EVERY SIZE* in your line . . .

. . . the same spruce appearance—when you design with Hackney Deep Drawn Shapes and Shells. And good looks are just one of the many advantages of using Hackney parts for your products.

You can cut dead weight with them, too—or add extra durability and resistance to shock and vibration. And the chances are good you'll wind up with a lower cost per unit.

Write today! Let our more than 50 years' experience help you add new sales appeal.

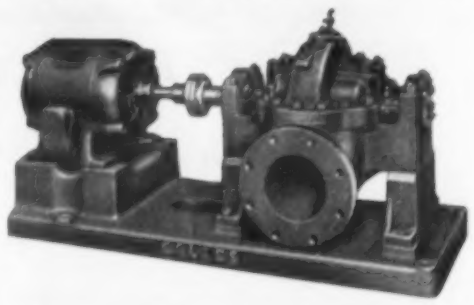
PRESSED STEEL TANK COMPANY
Manufacturer of Hackney Products

Hackney MILWAUKEE

1449 S. 66th St., Milwaukee 14
1322 Vanderbilt Concourse Bldg., New York 17
253 Hanna Bldg., Cleveland 15
936 W. Peachtree St., N. W., Room 138, Atlanta 3
208 S. LaSalle St., Room 786, Chicago 4
577 Roosevelt Bldg., Los Angeles 17
18 W. 43rd St., Room 23, Kansas City 11, Mo.

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

If you write maker identify as **IEN - 6299**



The new Goulds Fig. 3405 double suction, single-stage centrifugal pump for general purpose liquid handling.

This new pump gives you 5 BIG COST ADVANTAGES

1. Interchangeability of parts (1) increases flexibility in making field changes to meet different requirements; (2) simplifies spare parts inventories.
2. Completely new design incorporates many quality features usually considered as "extras."
3. Compact construction means real floor-space savings.
4. Stuffing box flexibility permits quick interchange of packing box with gland or mechanical seal, as your service requires.
5. You can change impeller rotation from right-hand to left-hand without construction changes.

Bulletin 721.6 gives you complete details, including Specs, interchangeability tables, efficiency curves.

Goulds PUMPS INC.
Seneca Falls New York

If you write maker identify as **IEN - 6300**

How Much Is Washroom Maintenance Costing *YOU?*

Provide AUTOMATIC 24-Hr. Service. Take a practical look at your own washrooms . . . the expense of towels required over a year . . . janitor time required to fill empty towel cabinets and empty waste containers . . . clean up towel litter. At best, towel service is as good as its maintenance . . . and that maintenance is an overhead expense costing you money!

New Sani-Driers eliminate ALL this needless expense! They provide fast, efficient hand or hair drying service 'round the clock . . . *quickly pay for themselves out of savings!* Approved by Underwriter's Laboratories.

Write for new illustrated literature! Semi-recessed model shown above. Wall and pedestal models also available.

Distributors In All Principal Cities
THE CHICAGO HARDWARE FOUNDRY CO.
"Dependable Since 1897"
3463 Commonwealth Avenue
NORTH CHICAGO, ILLINOIS

If you write maker identify as **IEN - 6301**

Couch Fire Alarm Systems *for* OUTSTANDING DEPENDABILITY

Designed to operate unfailingly when needed, even years after installation, Couch Fire Alarm Systems assure positive, dependable protection of life and property.

If your plant requires:
- a simple evacuation alarm
- a coded alarm which locates the fire
- a tie-in with municipal alarms

Couch Fire Alarm Systems are the ideal solution. Write today for Bulletin 5211.

Simplified Systems of Communication
S.H. Couch Company, Inc.
NORTH QUINCY 71, MASSACHUSETTS

USEFUL INFORMATION
(Continued)

If you write maker identify as **IEN - 6302**

PIEZOELECTRIC MATERIALS . . What they are and seven of their functions described in 20-page booklet

Brush Electronics Co.
3403-7 Perkins Ave., Cleveland 14, Ohio

"Piezotronics" tells about crystals and certain ceramic materials which generate electricity when squeezed, or which change dimensionally when charged electrically. It describes these properties and how they are used in phonograph pickups, in sonar submarine work, in microphones and headphones, ultrasonic generators.

If you write maker identify as **IEN - 6303**

PLASTIC MOLDING . . Importance of temperature in the plastic molding operation stressed in bulletin

Sarco Co.
2925 Empire State Bldg., New York 1, N. Y.

Answers to ten questions on injection mold temperature control are presented by new 8-page Bulletin 7 in the form of quotations from experts in the field. Sixteen questions and answers follow on the company's Sarcotrol mold heating and cooling unit for injection molding machines. They range from what is it to what is the price. A schematic diagram shows water temperature control method employed in the equipment so that mold temperature will be kept constant.

If you write maker identify as **IEN - 6304**

PROCESSING . . New house publication on developments in process, textile, water equipment

Rodney Hunt Machine Co.
48 Mill St., Orange, Mass.

"Orange Peal" is new house paper to be published every other month. It will describe developments in textile machinery, water wheels, industrial rolls, water-control equipment, stainless-steel fabrication. Your name will be added to the mailing list upon request should your interest lie in any of the subjects or products named.

If you write maker identify as **IEN - 6305**

PROTECTING . . Free safety poster urges plant workers to wear their safety goggles

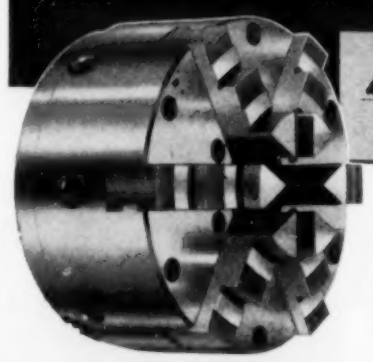
Willson Products Inc.
217 Washington St., Reading, Pa.

Four-color printing and embossed Braille lettering are features of new 15 by 11¾-in. poster sent without charge to post on your plant bulletin board. It points out the obvious advantages of preserving one's eyesight, urges use of safety goggles.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6306**

"BEST AND HANDIEST CHUCK I'VE EVER USED"
"VERY DEPENDABLE WHERE QUALITY IS OF EXTREME IMPORTANCE"
"MANY SHORT RUN JOBS CAN BE RUN WITHOUT THE NEED OF SPECIAL FIXTURES AND ARBORS"
"DOUBLED PRODUCTION RATE. TIME SAVER IN OUR WORK"
"VERY PLEASED WITH PERFORMANCE OF CHUCK"



Buck AJUST-TRU CHUCKS

Buck **6" JAW CHUCK**
With 6 External, 6 Internal Jaws
4", 5", 6", 7½" Diameters

Lines up dead true in less than a minute! Gives scroll chuck rechucking speed on duplicate parts with *.0005" precision.* 6 jaw 6" chuck handles work of 93 collets worth over $1,000! Ends most needs for stub arbors, mandrels, special fixtures. Adapts to lathes, screw machines, grinders, dividing heads. Often doubles, triples precision output.

No wonder Ajust-Tru chucks receive nothing but the highest praise! Get the *full* story. Send today for the latest catalog.

BUCK TOOL COMPANY
616 SCHIPPERS LANE • KALAMAZOO, MICH.

If you write maker identify as **IEN - 6307**

CUT COSTS WITH MULTIPLE BENDING

Whether you're bending pipe, tubes, reinforcing bars or structural shapes, you can greatly increase your bending production by multiple die bending.

Shown here is our Model A-5 BENDING MACHINE, tooled for bending 3 different radii without changing the set-up. In order to make multiple bending cost no more per die than single bending, individual dies are merely stacked on the die spindle and a shoe of the proper width permits the same degree to be bent without changing the automatic reset switch. The MODEL A-5 will bend pipe up to and including 2" standard weight pipe.

Redesigned and greatly improved, the Model A-5 still sells for only $1975. F.O.B. factory, U. S. Funds.

Smaller and larger machines available.

Write for detailed and descriptive folder.

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St., Dept. 7, Phila. 40, Pa., U. S. A.

If you write maker identify as **IEN - 6308**

Presto . . . it's UP!

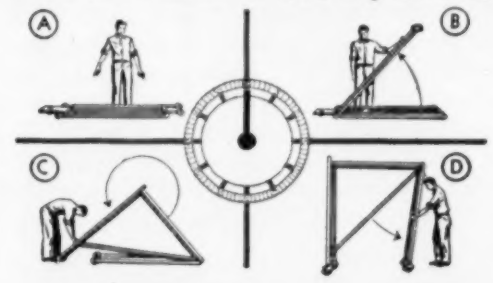
25 ft. "UP-RIGHT" SCAFFOLD-ON-WHEELS

Set up in only 5 minutes!

As if by magic, an aluminum alloy tower of any height desired is ready in minutes! Individual scaffold sections are set one on top of the other. Sections lock into place instantly. The tower rolls down aisles . . . straddles machinery.

HERE'S THE SECRET!... Patented **ONE-PIECE SECTIONS**

Each one-piece section is unfolded by one man in less than a minute! No tools, wing nuts or bolts.



WRITE FOR DESCRIPTIVE BULLETIN

"UP-RIGHT" SCAFFOLDS
DEPARTMENT 142 • 1013 PARDEE STREET • BERKELEY, CALIFORNIA
Factories: Berkeley, Calif. and Teterboro, N. J.
Offices in all principal cities

If you write maker identify as IEN - 6310

IF THE AIR IN YOUR PLANT IS all fouled up...

No problem too tough-whether your air is London Fog thick or Sahara Dry-gaseous or dusty- smoky or hot . . . MUCKLE VENTS remove it quickly and efficiently. These streamlined, propellerdriven,roofmounted ventilators are designed with motor out of the air stream to effectively pull out either wet or dry air. MUCKLE VENTS are a completely weatherproof packaged unit ready to be installed with a minimum of expense and work, available in wide range of 15 sizes from 254 CFM to 10280 CFM.

LET MUCKLE VENTS INCREASE EFFICIENCY IN YOUR PLANT!

Muckle WRITE SOME TERRITORIES OPEN FOR SALES REPRESENTATIVES

MANUFACTURING CO., OWATONNA 33, MINN.

If you write maker identify as IEN - 6311

the big cinch

TOWMOTORS IN ACTION IN U. S. INDUSTRY

Anything from pipe to pretzels, Baltimore Stevedoring finds Towmotor more than equal to the task.

Little inch or big one, any job's a lead pipe cinch with Towmotor speeding materials handling up to double and more for you . . . and the boss. Results like that are no pipe dream, thanks to TowmoTorque, the new automatic transmission. And Power Steering. Or the new Cushioned Power Diesels that perform like the frugal brutes they are. Send today for TowmoTorque and Power Steering booklet. TOWMOTOR CORPORATION, Div. 2606, 1226 E. 152nd Street, Cleveland 10, Ohio.

TOWMOTOR THE ONE-MAN-GANG ® FORK LIFT TRUCKS and TRACTORS Since 1919

TOWMOTOR ENGINEERED FOR QUALITY PERFORMANCE

If you write maker identify as IEN - 6312

do you use POISONOUS carbon tetrachloride?

FORMULA 602 SAFER!

Continued use of carbon tet causes severe and incurable damage to liver, kidneys, heart, adrenal glands and nervous system by absorption through skin. Safety authorities caution against its use. FORMULA 602 is 24 times safer than carbon tet!

FORMULA 602 CLEANS MOTORS AND ALL ELECTRICAL EQUIPMENT

FORMULA 602 effectively cleans motors, radio parts, coils, condensers, generators and all electrical equipment. It dries rapidly without leaving a residue, corroding metals or damaging electrical insulation.

OTHER USES!

FORMULA 602 is used to remove residues of solder flux from contact points, dip tank degreasing of parts and tools, as a diluent and wherever carbon tet is now used for cleaning!

SEND FOR FULL INFORMATION!

RESULT OF TEST BY INDEPENDENT LABORATORY!

CARBON TET
10 rats inhaled 125 parts carbon tet per million parts air for 2 days, 30 minutes each day. All 10 rats died!

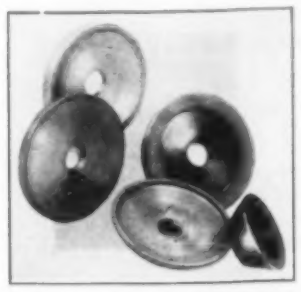
FORMULA 602
10 rats inhaled 125 parts Formula 602 per million parts air for 14 days, 30 minutes each day. All rats alive and healthy after test!

the PENETONE co.
BOX IEN-653 TENAFLY, NEW JERSEY

If you write maker identify as IEN - 6313

GRINDING . . Diamond wheels and hones in range of shapes and sizes

Source: ACE ABRASIVE LABORATORIES
250 W. 57th St., Room 830, New York 19, N. Y.



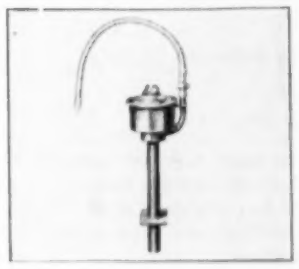
Ask for Star Dust Catalog

Straight wheels with diamond throughout the structure are available in diameters to 1 in. and in width to ¾ in., in plain and mounted designs, in the new Star Dust line of diamond wheels and hones. Straight wheels, with diamond on the periphery, in diameters from ¾ to 14 in. and in widths from ⅛ to ¾ in. are included with cut-off wheels, thread grinding wheels, cylinder wheels, plain and flaring cup wheels and dish wheels. Each design is illustrated, dimensioned and priced in the company's new Star Dust Catalog, available upon request.

If you write maker identify as IEN - 6314

PUMP . . Motor driven centrifugal for coolant, rates 1½ gpm. at 1 ft.

Source: VIKING INDUSTRIES
218-22 Montague St., Rockford, Ill.



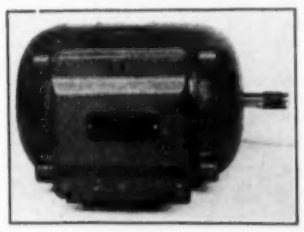
$36 complete

Oils to 20 SAE and water soluble coolants can be handled by this new assembly of motor driven pump, ½-in. suction line, mounting plate and valve, flexible, ¼-in. nozzle equipped delivery tube. The 1/30-hp. oil sealed motor operates at 1,500 rpm. on 110-volt 60-cycle ac. Overall dimensions are 4½ by 15 inches. Enclosure is in a brass housing. An extension cord and switch are standard equipment.

If you write maker identify as IEN - 6315

MOTOR . . Explosion proof ac., ⅛ to ¾ hp., 1, 2 and 3 phase

Source: HOWELL ELECTRIC MOTORS CO.
552 Howell St., Howell, Mich.

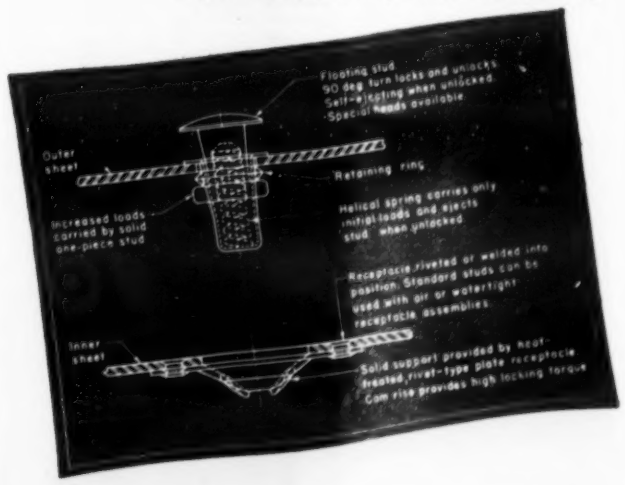


For hazardous duty

Capacitor start, induction run, for single-phase motors, and standard two and three-phase designs are included in this new line of totally enclosed motors. The capacitor for the single-phase unit is located in the explosion proof terminal box. The motor meets requirements for Underwriters Laboratories for Class-1, Group-D and for Class-2 Groups-F and G service. The conduit opening from the terminal box can be located in any of four positions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6316



HOW QUICK-LOCK CUTS FASTENING COSTS

QUICK-LOCK speeds up the mounting and demounting of detachable panels, works equally well on curved or straight sheets. It is adaptable to many different fastening applications in the aircraft, automotive, railroad, electrical and appliance fields. Write for literature and samples today.

SIMMONS FASTENER CORPORATION, 1758 No. Broadway, Albany 1, New York

Simmons | QUICK-LOCK SPRING-LOCK ROTO-LOCK LINK-LOCK

FASTENERS THAT IMPROVE PRODUCTS AND REDUCE ASSEMBLY COSTS

If you write maker identify as IEN - 6317

LONGER Anode Life . . . With Udylite Ferrolum

Udylite Ferrolum Anodes are made with a STEEL core, clad with lead . . . the molecules of both metals are bound inseparably together. The anodes can't crack or peel no matter how they are bent or twisted. As a result, Ferrolum Anodes combine high, even electrical conductivity with the finest corrosion resistance . . . PLUS great rigidity and strength!

New Udylite Ferrolum Anodes offer exceptionally long life. That means long-range economy as well as low initial cost. They offer more uniform deposits too, with less build-up of insulating film and shorter plating time. Also, Udylite Ferrolum Anodes are much lighter in weight.

These new anodes are available in type I, Chemical Lead Clad, type II, Tin-Lead Clad, and type III, Antimonial Lead Clad.

Get the full story on these NEW Udylite Ferrolum Anodes from your Udylite technical man today, or write direct. THE UDYLITE CORPORATION, DETROIT 11, MICHIGAN.

Check these Advantages —

1. Economical cost.
2. Better and more uniform conductivity.
3. Great rigidity and strength.
4. Lightness in weight.
5. Less build-up in insulating film.
6. Longer Life.

THE UDYLITE CORPORATION
DETROIT 11, MICHIGAN
PIONEER OF A BETTER WAY IN PLATING

If you write maker identify as IEN - 6318

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 6319

FREE THE MOST COMPLETE BOOK on INDUSTRIAL SIGNALS

tells you how to use Benjamin Sound Signals as the "20th Century Pony Express" To Sound The Alarm Against Production Enemies

For your protection against hidden costs . . . production delays . . . stalled machines . . . flood, fire and sabotage hazards . . . 48-page book of photographs, diagrams, charts and descriptions, compiled by sound-signal engineers . . . the basic principles of modern signal practice, explained in down-to-earth, non-technical language . . . over 25 important subjects on the correct planning, selection and use of signals.

For your free SIGNAL GUIDEBOOK send request on company letterhead to: Benjamin Electric Mfg. Co., Dept. O, Des Plaines, Ill.

BENJAMIN Signal Equipment

197

If you write maker identify as IEN - 6320

Something NEW IN WHEELS!

"Non-breakable" Heavy Steel Plate Construction

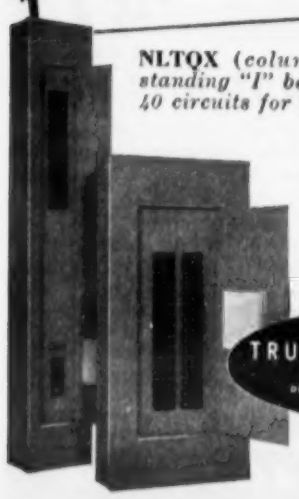
"Easy-rolling composition" Molded-On rubber tires. Roller bearings. Finished hub end caps.

DICO COMPANY 202 S.W. 16th ST., DES MOINES, IOWA

If you write maker identify as IEN - 6321

Check these features of
Trumbull NLTQ Lighting Panelboards

- Incorporate Trumbull TQL plug-in circuit breakers with thermal-magnetic trip, trip-free action, trip indicating position, manual re-set.
- Readily removable interiors, with busbars molded in plastisol (run cooler than in open air).
- Protected barriers, integral with front.
- Breaker knockouts in front panel to provide for future circuits.
- Compact boxes with adequate knockouts and gutters.



NLTQX *(column type) Panelboards fit standing "I" beam. Available in from 4 to 40 circuits for both 3- and 4-wire services.*

NLTQ *Panelboards: Available in from 4 to 42 circuits for both 3- and 4-wire services with lugs only, or 50 to 225 ampere breakers in mains and 10 to 50 ampere breakers on branches. AC only.*

TRUMBULL (T) ELECTRIC
DEPARTMENT OF GENERAL ELECTRIC COMPANY PLAINVILLE, CONN.

Sold everywhere through leading distributors. Let us mail you Bulletin TEB-14.

If you write maker identify as IEN - 6322

If you have a labeling problem ordinary labels can't solve...use AVERY Kum-Kleen self-adhesive LABELS

...the tough ones are our specialty

...where other types of labels are found "wanting"...or when you need to substitute an attractive pressure-sensitive label for a costly nameplate... Avery Kum-Kleen labels are the *best* solution to your problem!

...and so are the other kind..

...where you want *faster* labeling... improved appearance...labels that won't pop, curl or peel...or those the housewife can remove without soaking or scraping...there's no substitute for an Avery Kum-Kleen label!

faster • easier • more economical

Patented Avery dispensers...manual or electric... feed die-cut *pressure-sensitive* labels off roller tape, ready to be LAID ON any clean, smooth surface. No moistening...no sticky fingers.
Where can YOU use these labels in YOUR business? Write today for free samples, case histories and prices.

AVERY ADHESIVE LABEL CORP., DIV. 103
117 Liberty Street, New York 6 • 608 South Dearborn Street, Chicago 5
1616 So. California Ave., Monrovia, Cal. • Offices in Other Principal Cities
Originators of Pressure-Sensitive Labels

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 6323

RECTIFIERS . . How to protect them from disconnect voltage surges is described in bulletin

Accurate Engineering Co.
2003-7 Blue Island Ave., Chicago 8, Ill.

High potential is induced when the dc. circuit is broken to a magnetic winding. The company has made a study on how to cope with the problem and presents its recommendations in 4-page Bulletin 1076-A. One method is to use a selenium rectifier across the switch in blocking direction.

If you write maker identify as IEN - 6324

RUBBER . . Conductive rubber described as to properties and uses in house paper

Natural Rubber Bureau
1629-33 K St., N. W., Washington 6, D. C.

Feature article in the Winter 1952 issue of "Rubber Developments" is on conductive rubber and its uses. An electron photomicrograph shows the carbon-black chains that make rubber conductive. Use of the rubber to prevent static discharge is outlined. A copy will be sent on request.

If you write maker identify as IEN - 6325

SAFETY . . On and off the job, a talk by company's Employee Relations Director

E. I. du Pont De Nemours & Co.
2518 Nemours Bldg., Wilmington 98, Del.

Sixteen-page pocket booklet reprints a recent speech by Emile F. du Pont, who is also Chairman of the National Safety Council. Its title is "Safety is a State of Mind." Topics are, we can't relax, company interest essential, preventive safety is first, plant safety not enough, laws alone not effective, preserving national safety.

If you write maker identify as IEN - 6326

SAFETY . . Materials and services available from the Council are summarized in new catalog

National Safety Council
423-27 N. Michigan Ave., Chicago 11, Ill.

Magazines, books, newsletters, training aids, consulting services, awards, talks, booklets, posters, films, all on safety, are presented in new 52-page "Service Guide 2.1." The Council will be happy to send you a copy without charge.

If you write maker identify as IEN - 6327

SHEARING . . 72-page pocket handbook on shear and slitter knives tells how to select and use

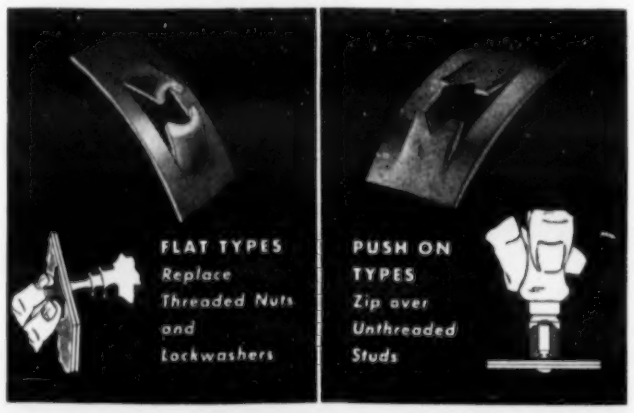
American Shear Knife Co.
P. O. Box 355-A, Homestead, Pa.

Grades, recommended applications, standard units, suggestions on care and operation, grinding instructions, are set forth by new Shear Knife Handbook for the company's shear blades and slitter blades. It covers rotary and reciprocating types, includes a set of data tables.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6328

TINNERMAN *Speed Nuts*®...
"TOPS" in Production Time-Savers!



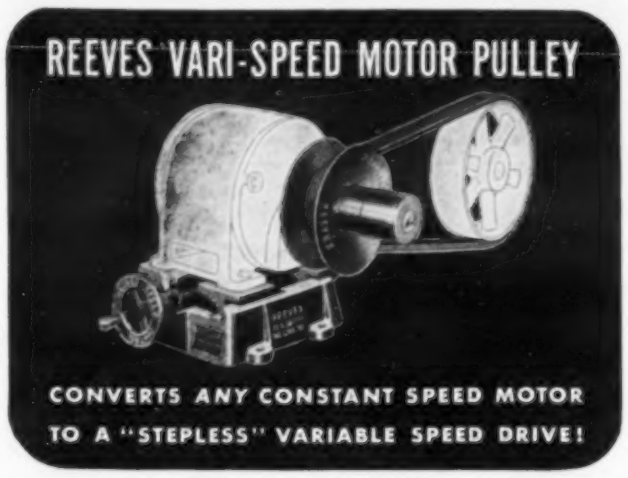
FASTER, EASIER TO APPLY IN ASSEMBLY!

Whatever you make, or assemble, there's a SPEED NUT way to faster, less costly attachments in production! Industry's leaders in nearly every field have turned to TINNERMAN for better fastening engineering . . . lower production costs! Call your Tinnerman representative for data on our FREE Fastening Analysis service, or write to:

TINNERMAN PRODUCTS, INC.
Dept. 12, Box 6688, Cleveland 1, Ohio

If you write maker identify as IEN - 6329

REEVES VARI-SPEED MOTOR PULLEY



CONVERTS ANY CONSTANT SPEED MOTOR TO A "STEPLESS" VARIABLE SPEED DRIVE!

For Stepless Speed Adjustability Within 4:1 Range. Sizes to 10 Horsepower

1 Mount Your Motor on This REEVES Motor Base. Base includes sliding platform and handwheel for moving motor forward or back.

2 Apply This Disc Assembly to Motor Shaft. Consists of two cone-shaped discs, one sliding laterally, and compression spring.

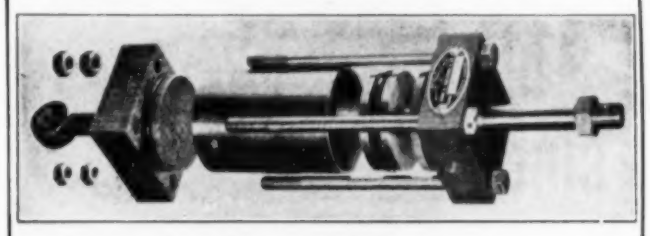
3 Connect to Driven Machine with REEVES V-Belt. Place V-belt between discs and over pulley on power input of driven machine.

For complete details, send for FREE *Catalog IN 11d-G*

REEVES PULLEY COMPANY • COLUMBUS, INDIANA
Recognized Leader in the Specialized Field of Speed Control Engineering

If you write maker identify as IEN - 6330

NEED LOW COST CYLINDERS?



LOW INITIAL COST • EFFICIENT SERVICE • SIMPLE MAINTENANCE

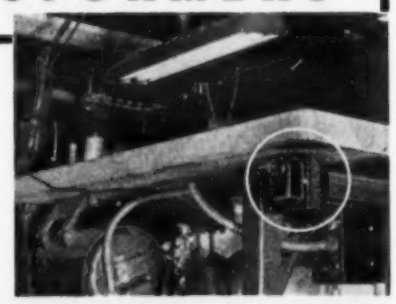
The double-acting model illustrated, with oil impregnated plastic heads, is produced in 2 and 3 inch bores. They are extremely light in weight, yet rugged enough for most jobs. They can be supplied with hardened piston rods, dust excluders or totally enclosed seals where required.

Write us your requirements

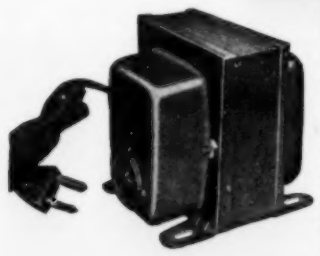
JOHN D. BACHMAN & CO.
1732 SPARGER LANE • BRISTOL, TENN.

If you write maker identify as IEN - 6331

MAKE EVERY MACHINE INDEPENDENTLY LIGHTED WITH ACME ELECTRIC STEPDOWN TRANSFORMERS



• Acme Stepdown Transformers are available in standard ratings from 75 to 2000 watts. Ready for easy installations.



Motorized machines that are individually lighted (with a concentrated light at the working area) can be shifted in production lines with a minimum of expense and delay. An Acme Electric stepdown transformer mounted on the machine and connected to the power line can supply proper voltage for lighting requirements. Investigate this modern method of completely electrifying machinery.

ACME ELECTRIC CORPORATION
266 WATER ST. CUBA, N.Y.

Acme ACME Electric

If you write maker identify as IEN - 6332

This corrugated iron siding painted with Cabot's Flexiblac in 1908 still shows no signs of rust

44 YEARS
RUST-PROTECTION WITH
Flexiblac!

Cabot's *Flexiblac* is an elastic gloss *black* waterproof paint that protects all kinds of iron, steel and other metal from corrosion, rust or chemical action. Ideal for all industrial uses. Costing only ¼ as much as red lead, Cabot's *Flexiblac* is the most economical way to prevent rust.

Write today for free sample of *Flexiblac* and complete information.

SAMUEL CABOT INC., 633 Oliver Bldg., Boston 9, Mass.

If you write maker identify as IEN - 6333

PLUGMOLD 2000
SAVED 13 Working Days!

At The E. Ingraham Company — world famous clock manufacturers of Bristol, Conn. — PLUGMOLD 2000 has proved again that it is EASIER, FASTER, CHEAPER to install. Using Plugmold — two men built this timer test rack in 2 DAYS. It formerly took two men 3 WEEKS to build the same rack using old type construction with ordinary wiring.

Wiremold's famous Plugmold 2000 gives you SURFACE mounted raceways — no drilling and cutting for outlet boxes! Saves time, effort, money!

Write today for the full Plugmold story and the new Plugmold 2000 book!

WIREMOLD

Makers of
PLUGMOLD—multi-outlet systems
WIREMOLD—electrical raceways
PANCAKE—overfloor raceways

THE WIREMOLD COMPANY
HARTFORD 10, CONNECTICUT

If you write maker identify as IEN - 6335

PUMP . . Self-priming centrifugal to handle liquids containing solids

Source: RALPH B. CARTER CO.
190-94 Atlantic St., Hackensack, N. J.

Ask for Bulletin 5300

New design in the Humdinger line of centrifugal pumps is available in sizes from 1½ to 10 in. with capacities, on free delivery, at about 90 to 4,150 gpm. The pump is available with a gasoline or diesel engine or with a motor or pulley for belt connection. Assembly includes an abrasive resistant open type impeller, shaft seal and suction check valve made of Neoprene. Volute passages are clear. There is provision for adjustment to compensate for impeller wear. Mountings include skids, steel wheels, pneumatic tires, trailer assemblies.

If you write maker identify as IEN - 6336

CONDUCTOR . . Insulated wire, flexible from minus 104 to 400 deg. F.

Source: ESSEX WIRE CORP.
1603 Wall St., Fort Wayne 6, Ind.

Sil-X Bulletin upon request

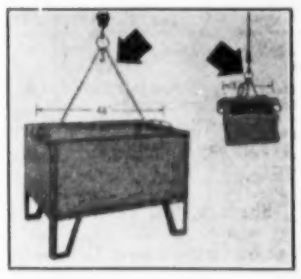
Sil-X is a new stranded wire made of tinned copper with silicone insulation and lacquered glass braid. It is available in sizes from AWG 22 to 4/0. Conductor stranding ranges from 7/30 to 259/21. Approximate diameter is 0.085 to 0.821 inch. Weight is 5 to 810 lb. per hundred feet.

The wire remains flexible at high and low temperatures. The insulation is fungus proof, resistant to flex cracking and will not become brittle due to weathering. It has been approved by Underwriters' Laboratories Inc. for use in lighting fixtures to operate at high and low temperatures. It is suited for oil and gas control circuits in oil and gas furnace controls and on electrical appliances where heat is a factor.

If you write maker identify as IEN - 6337

HANDLING . . Adjustable box grab employs forged steel hooks and chain

Source: PALMER-SHILE CO.
16009 Fullerton Ave., Detroit 27, Mich.



Universal Grab

Link chain is threaded through two load-lifting hooks and is attached to a ring in this new grab. The ring also carries a grab hook for the chain. This hook rides free when picking up a large box or crate. It takes up the chain slack to adjust the load hooks for a small load. Size range is from 16 to 48 in. in normal service. The chain is ⅜ inch. Two grab sizes rate ½ and 1-ton load capacity respectively.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6338

NEW 16-page *CATALOG*
gives all the facts on the

REVOLUTIONARY
Sier-Bath
Flexible
GEAR COUPLINGS

Illustrates These *Sier-Bath* Advantages:
- 3/5 Usual Size, 1/2 Usual Weight
- Assembled, Uncoupled in seconds!
- Slash assembly costs, down-time

Send for FREE COPY

Gives design explanation, advantages, application . . . complete technical data on all types . . . engineering information, etc. Standard types (below) sizes ⅞ to 6, HP 4 to 600 per 100 RPM. Special types, sizes to order. Ask your Distributor, Representative, or write us.

***Sier-Bath* GEAR and PUMP CO., Inc.**
9246 Hudson Blvd., North Bergen, N. J.
Established 1905 Member A.G.M.A.

Also manufacturers of Precision Gears, Screw and Gear Pumps

If you write maker identify as IEN - 6339

Wear a DUPOR No. 10
Chemical Cartridge Respirator

Code "A" Cartridges (Soda Lime)—White Plastic for light concentrations of inorganic acid gases.

Code "B" Cartridges (Activated Charcoal)—Black plastic for light concentrations of organic chemical vapors.

Code "AB" Cartridges (Soda Lime and Activated Charcoal)—Yellow plastic for light concentrations of combined inorganic and organic gases.

Unit has DUPOR "controlled-breathing" valves. Double filter apertures hold 50cc. capacity chemical cartridges. Soft rubber face mask gives gas-tight fit on any shape face, as well as panorama view with no blind spots. Chemical filters are packed in colored plastic cartridges that will not corrode like metal ones or crush like paper types. Unit is shipped with code "B" cartridge unless otherwise specified.

Sample sent

$5.00 *pp*

Extra Cartridges 70c a set

H. S. COVER, South Bend, Ind.

If you write maker identify as IEN - 6340

GREAT NEWS FOR SMALL SCREW USERS!

POWERFUL . . . COMPACT . . . BUILT TO LAST . . . LOW IN COST

Dremel Moto-Screwdrivers are small, yet rugged . . . precision-built for long, trouble-free service. Because they are so compact, they are ideal for small parts assembly work, especially suitable for female operators. Many users report savings which pay for the tools the very first day in use! Ask your Dealer for details, or write for free data sheet without obligation.

LIGHT WEIGHT, COMPACTNESS, FAST OPERATION make Moto-Screwdrivers the ideal tool for small screw users. They occupy little bench space, are held at comfortable right-angle to work, and drive free-running screws and nuts more than 5 times faster than by hand. Take advantage of these savings now!

DREMEL MANUFACTURING CO., 2442 Eighteenth St., Racine, Wisconsin

If you write maker identify as IEN - 6341

ASK FOR YOUR FREE COPY!

IT'S *JAM-PACKED* WITH MONEY-SAVING IDEAS

There are dozens of ways the Zip-Lift can help you cut costs with "thru-the-air" handling. The Zip-Lift is easy to install. Hang it up on hook, jib, or trolley, and plug it in. Handles loads up to one ton. Write for Bulletin H20-1. This fully illustrated bulletin suggests many ways you can save time, effort, and money in your plant. Write today.

HARNISCHFEGER CORPORATION
MILWAUKEE 46, WISCONSIN

If you write maker identify as IEN - 6342

Keep Lubrication Fittings Clean

Here's a tip that will help cut maintenance costs and prolong bearing life . . . use these inexpensive flexible plastic caps on your lubrication fittings. They'll keep the fittings free from the dirt and grit that's often forced into the bearings when the grease gun is applied. The caps can be slipped on and off with ease — and once on, won't shake loose. They're also unaffected by oil, grease or water.

Sizes for Hydraulic, Button Head or ⅛" Dot Type Fittings. Order a supply.

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP, 10 East 40th St. NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 6343

THIS IS THE VALVE THAT *Seals itself* . . . THAT AUTOMATICALLY ADJUSTS FOR WEAR . . .

NOW! AT NEW LOW PRICES!

A Homestead-Reiser *acts on its own* to maintain a *drop-tight seal* at all times. It automatically—without manual assistance—adjusts itself to make up for wear as wear occurs.

Its ability to seal itself is due to the wedge-action of its two-piece plug which, *under line pressure,* causes the plug surfaces to press outward to form a perfect seal against the bore of the body. A full lubricant seal surrounds the ports and top and bottom of the valve.

Extra-long, leakless service . . . more operations between lubrications—up to 22 times more by actual tests with other lubricated plug valves . . . less maintenance and lower plant operating costs result from their use.

Available in semi-steel or cast-steel, 100% Port Area or Venturi, in sizes ½" to 14" for steam working pressures to 150 lbs., or oil—water—gas to 200 lbs. Order today and prove them to your own satisfaction.

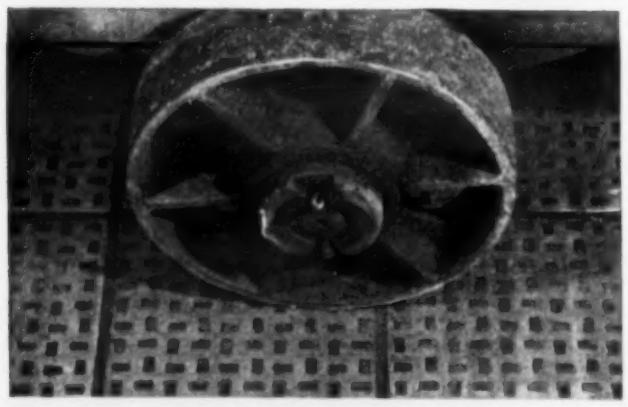
Write today for VALVE REFERENCE BOOK No. 39. For local distributor, see Yellow Pages of your Telephone Book.

HOMESTEAD VALVE MANUFACTURING CO.

P. O. BOX 85 *"Serving Since 1892"* CORAOPOLIS, PA.

If you write maker identify as IEN - 6344

Acme Steel Floor Plate Makes Floors Last Longer



Here's the economical, long-lasting, commercially proven reinforcement for concrete floor surfaces. Each Acme Steel Floor Plate protects one square foot of floor area, anchored to concrete by 100 barbed prongs. Plate cannot work loose, weave or rattle. No cutting or waste in installation. Compact, easy to handle. Provides rugged protection, longer floor life, safe floor surface for aisles, loading docks, ramps, stock rooms, warehouses. For full details, write Dept. IEN-63-F. ACME STEEL COMPANY, 2840 Archer Avenue, Chicago 8, Illinois.

ACME STEEL

USEFUL INFORMATION

(Concluded)

If you write maker identify as IEN - 6345

SLITTING . . Rotary gang machines for sheet metal are described as to design, selection, use

Yoder Co.
5555 Walworth Ave., Cleveland 2, Ohio

"Slitting Lines," new 78 page Third Edition of the company's Form 700, presents information on design, selection and operation of sheet-metal slitting machines. It includes time studies, operating-cycle analysis, coil-handling and scrap-disposal methods, specifications of standard equipment.

If you write maker identify as IEN - 6346

STEEL PLATE . . Plastic slide selector on size obtainable for a given steel plate thickness

Lukens Steel Co.
501-5 Lukens Bldg., Coatesville, Pa.

Steel Plate Size Selector is a recently improved unit measuring 9 by 3½ in. and available on request. One side enables you to determine the longest and widest steel plates obtainable in thickness from $\frac{3}{16}$ to 25 inches. Width range is 24 to 195 inches. The other side is arranged for calculation of weights of rectangular and circular steel plates.

If you write maker identify as IEN - 6347

STRAPPING . . How to employ strapping in bundling, packing, loading products for shipment

Signode Steel Strapping Co.
2630 N. Western Ave., Chicago 47, Ill.

New printing has made additional copies available for the company's 40-page pocket "Guide to Better Shipping." It shows how to employ steel strapping on crates, cartons, packages, how to bundle bulky or odd-shaped products, how to brace freight loads. It includes catalog information on the strapping, application tools, accessories.

If you write maker identify as IEN - 6348

TRUCKS . . Operator instruction manual on power lift truck emphasizes selection and training

Lewis-Shepard Products Inc.
190 Walnut St., Dept. R-16, Watertown 72, Mass.

Cartoon illustrations point up the text of new 8-page booklet, "Operating Your Spacemaster Fork Truck." The booklet suggests care in selecting an operator, gives an outline of driving instruction, includes a list of 19 do's and dont's.

If you write maker identify as IEN - 6349

WELDING . . Color slide film on welding ideas has sound accompaniment

Eutectic Welding Alloys Corp.
40-42 172nd St., Dept. "P", Flushing 58, N. Y.

Nineteen minutes is showing time of new 35-mm. film strip and 33-rpm. record accompaniment titled "Better, Faster, Cheaper with Welding." Color pictures, cartoons and diagrams show welding methods in readily-understandable manner from production, maintenance, salvage operations.

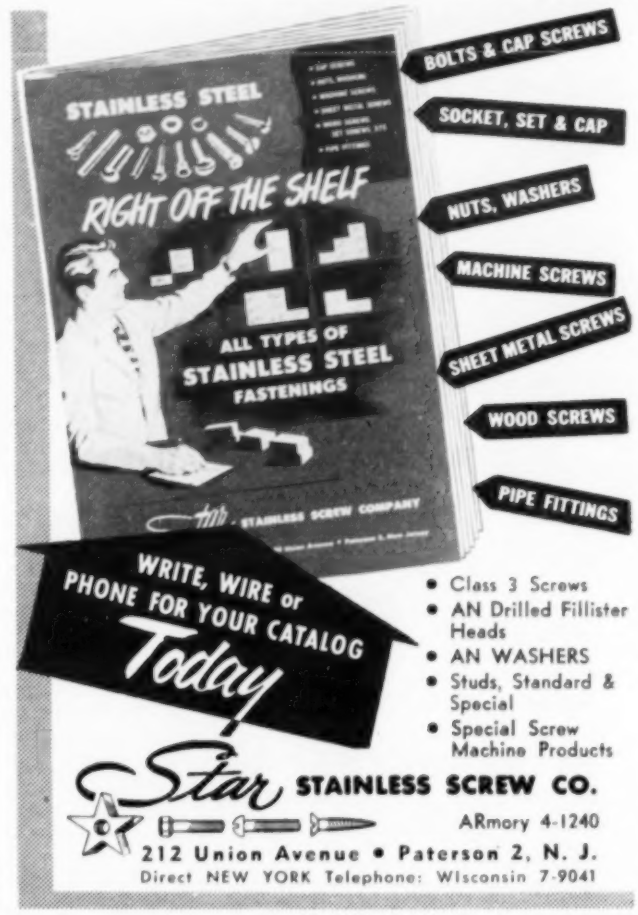
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6350

Since World War I, welding has been our business and today every U. S. jet engine manufacturer is a user of "American Welding" component parts. If your requirements involve either fusion or resistance welding of ferrous or non-ferrous metals, drop a line to our Product Development Division. We can provide complete designing, engineering, metallurgical and machining facilities and will be glad to put our 34 years of welding experience to work on your problem.

THE AMERICAN WELDING & MANUFACTURING CO.
160 DIETZ ROAD • WARREN, OHIO

If you write maker identify as IEN - 6351



Star STAINLESS SCREW CO.
ARmory 4-1240
212 Union Avenue • Paterson 2, N. J.
Direct NEW YORK Telephone: WIsconsin 7-9041

If you write maker identify as IEN - 6352

"GIBRALTAR" OILS and GREASES REDUCE MAINTENANCE COSTS

With 44 years experience in the industrial field, we are in position to help solve your lubrication problems.

We specialize in INDUSTRIAL LUBRICANTS for all INDUSTRIAL applications.

Our Oils prevent hard carbon, varnish, sludge and other known conditions.

Our Oils and Greases will reduce maintenance costs and down hours.

"GIBRALTAR" Oil Concentrates for lubricating oils and fuel oils.

"GIBRALTAR" Rad-Treate for rust preventive. Complete line of "GIBRALTAR" lubricating oils for compressors, diesel engines, steam engines, gasoline engines and lithographing ovens.

Our Engineers will be glad to help you with your lubrication problems. We invite your inquiries, small or large.

HOOD REFINING COMPANY
Hood Bldg. **Manor, Pa.**

If you write maker identify as IEN - 6353

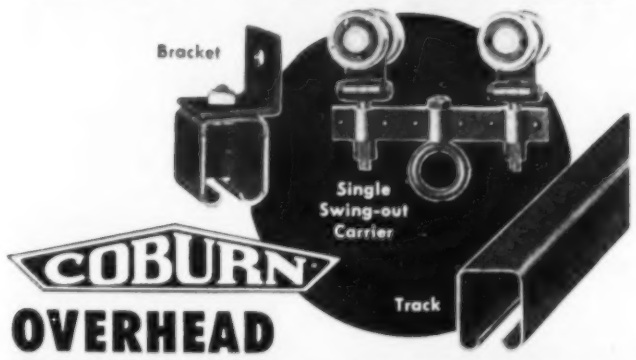
Faultless Casters equipped with the new Drawn Steel Wheels provide (1) *longer life,* (2) *greater efficiency,* (3) *at minimum maintenance* and, thus, (4) *lower operating cost per mile.*

Faultless Steel Wheel Casters help industry reduce overhead by maintaining fast, fluid production lines. These precision-made wheels are machined to tolerances typical of fine tools and like any quality equipment, are the best investment for long uninterrupted service. Write for Bulletin

FAULTLESS CASTER CORPORATION
Dept. IE, Evansville 7, Indiana
Branches in Principal Cities—Canada Factory: Stratford, Ont.

If you write maker identify as IEN - 6354

BOOST PRODUCTION



COBURN

OVERHEAD CONVEYING EQUIPMENT

Meet today's need for maximum plant production, increased efficiency and faster handling of materials with Coburn Overhead Conveying Equipment. It gives you unobstructed floor space, requires very little headroom, makes it easy to spot work directly over machines. Loads up to 3000 lbs. handled by hand chain or electric hoist; power-operated equipment also available.

For additional information write to Sales and Engineering, 56 Sterling St., Clinton, Mass., or consult your classified telephone directory. Write today for catalog #220.

EAST: Wickwire Spencer Steel Division, Clinton, Mass.
WEST: The Colorado Fuel & Iron Corporation, Denver, Colorado
PACIFIC COAST: The California Wire Cloth Corporation, Oakland, California

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION
CFI

If you write maker identify as IEN - 6355

ASK HIM! Norton G Bond wheels have already made plenty of friends in plants everywhere. How about getting *your* shopmen's reaction to the "Touch of Gold"?

Boost your profits with the NEW G BOND for your latest Norton value-adding "TOUCH OF GOLD"

You'll find that ALUNDUM* grinding wheels made with Norton's new vitrified G Bond cut freer, cooler and faster, hold corners better, are better for form grinding and produce a smoother finish. They dress easier, cover a wider range of jobs and do more work per wheel.

That's because the new G Bond holds abrasive grains *just long enough* to do the most effective cutting job, then releases them to make way for new grains with fresh, sharp cutting edges. This keeps the wheel's grinding surface at constant peak efficiency — the "Touch of Gold" that adds more profits to your precision and semi-precision grinding jobs.

ASK YOUR NORTON DISTRIBUTOR about arranging a try-out in your plant. Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Mass.

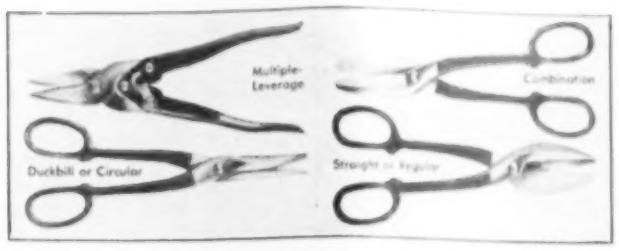
NORTON
ABRASIVES
Making better products to make other products better

W-1483 *Trade-Mark Reg. U. S. Pat. Off. and Foreign Countries

If you write maker identify as IEN - 6357

SHEARING . . Eleven snip designs in All-Purpose line, for any material

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.



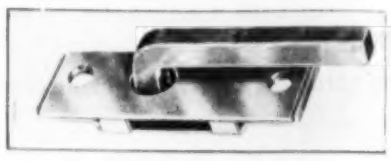
Uniform shearing action

Left, right and straight cut, duckbill and circular cut, regular and combination patterns are included in this new Proto line of snips. Three are multiple leverage. Blades in each assembly are drop forged heat treated steel. Metals, rubber, leather, linoleum, canvas can be cut.

If you write maker identify as IEN - 6358

LOCK . . Formed steel latch, lever operated for use on small doors

Source: A. L. HANSEN MFG. CO.
5051 Ravenswood Ave., Chicago 40, Ill.



To specification

Doors on tool boxes, utility compartments, motorcycle side cars, first-aid cabinets, food and refrigerator boxes, are typical examples for application of this new lever operated latch. It is suited for use on wood or metal. It features strength, compact design and light weight. The handle is integral with the bushing and lock bolt.

If you write maker identify as IEN - 6359

VALVE . . Four-way pneumatic ¼ in. ports and solenoid operation

Source: AIR FIXTURES INC.
353 Manchester Ave., Dept. 56, No. Manchester, Ind.

List is $24.50

A solenoid has been added to the company's four-way pneumatic operating valve, initially designed for foot operation. The solenoid is available for 110 or 220-volt power input on constant duty. The valve is suited for application on single and double-acting pneumatic cylinders to handle pressures to 200 pounds. It is fitted with stainless steel exhaust seats, brass inlet seats, bronze springs. The ports are threaded for ¼-in. pipe. Dimensions are 6½ by 2¼ by 4⅝ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6360

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

FREE BOOKLET . . . Mounted wheels and other abrasive products for portable and internal grinding

Here's valuable help for users of high speed portable and internal grinding equipment. A new 32-page booklet designed to help you select the correct abrasive product to improve workmanship and reduce production costs.

This booklet, "Mounted Wheels and Related Abrasive Products," tells you what gradings to use for roughing or finishing specific metals or materials. It covers silicon carbide and aluminum oxide mounted wheels, "MX" mounted wheels, and coated abrasive products—all made by CARBORUNDUM, your *only* source for *every* abrasive product.

All standard mounted wheel shapes are illustrated; wheel dimensions and mandrel sizes listed. A handy chart shows the coarse grit limits for each shape in "MX" and in each of the three bonds used: vitrified, resinoid, and rubber.

The coated abrasives section gives you complete information on Cloth Discs, Cartridge Rolls, "Nolap" Cloth Sleeves, and Industrial Cloth Sleeves.

Get your free copy of this helpful booklet. Send for it today—use the inquiry form provided by this magazine—or write us at Dept. IEN 81-311.

For help with any abrasive problem, call upon your CARBORUNDUM distributor or salesman.

"Carborundum" and "MX" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, N. Y.

THE CARBORUNDUM COMPANY
Niagara Falls, New York

If you write maker identify as IEN - 6361

THE HAMILTON
PORTELVATOR®
(Portable Elevating Table)

MAKES IT *Easy* TO LIFT • LOWER LEVEL • TRANSPORT LOADS UP TO 5,000 lbs.

3 TABLE SURFACES
Can be worked at from **ALL 4 SIDES**

Slow or fast lift.

Self locking at any height.

4 POINT SUPPORT
(table can't tip)

Lift mechanism can be operated from either end.

Turns easily on anti-friction casters. Positive floor lock.

WELDED CONSTRUCTION

STYLE "A" (Illustrated)*
Max. Height 40" Min. Height 25" Length 33" Width 21" Weight 225 lbs.
Capacity 2,000 lbs. (plus safety factor)

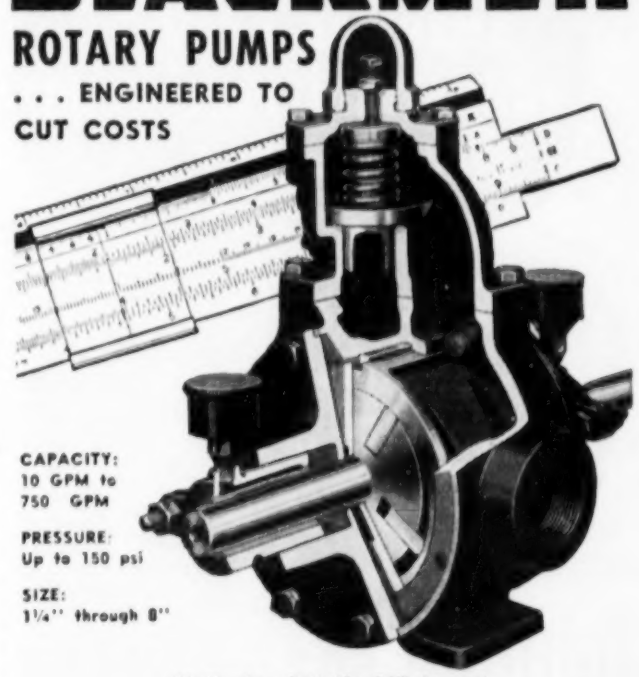
*THREE STANDARD MODELS TO CHOOSE FROM

GET THE DETAILS • WRITE FOR BULLETIN P-5248

THE *Hamilton* TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as IEN - 6362

BLACKMER
ROTARY PUMPS
. . . ENGINEERED TO CUT COSTS



CAPACITY: 10 GPM to 750 GPM

PRESSURE: Up to 150 psi

SIZE: 1¼" through 8"

Write for Bulletin 307 to get "FACTS ABOUT ROTARY PUMPS"

BLACKMER LIQUID MATERIALS HANDLING

BLACKMER PUMP COMPANY • GRAND RAPIDS, MICH.

If you write maker identify as IEN - 6363

WATSON-STILLMAN
HYDRAULIC POWER TOOLS FOR INDUSTRY

Send for your copy of Bulletin A-5 . . . It's Free.

WATSON-STILLMAN FITTINGS DIVISION
H. K. PORTER COMPANY, INC.
Roselle, New Jersey

If you write maker identify as IEN - 6364

feature for feature...

THIS NEW SQUARE D VOLTAGE TESTER

Tops them ALL!

for further details, write Square D Company, 6060 Rivard Street, Detroit 11, Michigan

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 6365

AMERICA'S *FINEST* INDUSTRIAL PACKAGING LABORATORY...

...can also provide a more efficient shipping container for YOUR product

SEND FOR FREE BOOKLET

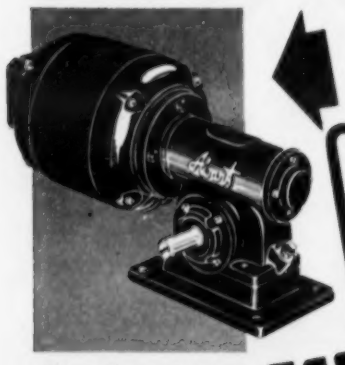
General BOX COMPANY

GENERAL OFFICES: 1815 MINER STREET DES PLAINES, ILLINOIS

DISTRICT OFFICES AND FACTORIES: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon. General Box Company of Mississippi, Meridian, Miss. Continental Box Company, Inc., Houston, Dallas

If you write maker identify as IEN - 6366

Find out WHY more and more MODERN DESIGNers choose ABART GEARMOTORS



Abart Gearmotors are available with output speeds as low as 17½ R.P.M., 1/6 to 5 h.p., ratios 5-4/5 up to 100 to 1.

For production machinery or adaptations of speed reduction for special equipment—modern designers find that their job is simplified with ABART GEARMOTORS. You, too, can get the same results, satisfaction and national service with Abart.

SEND TODAY FOR THIS HANDY, "POCKET-SIZE" CATALOG

Abart GEAR & MACHINE CO.

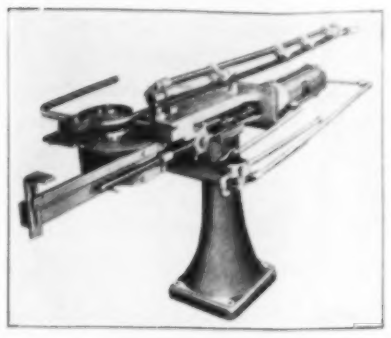
4823 WEST 16th STREET • CHICAGO 50, ILLINOIS

Mfrs. of Gears, Speed Reducers and Gearmotors

If you write maker identify as IEN - 6367

BENDING . . Pneumatic machine for 1¼ in. 16 gage tube or equal

Source: PAUL MACHINE TOOL & DIE WORKS
4602 S. Kedzie Ave., Chicago 32, Ill.



Takes 80 pound air

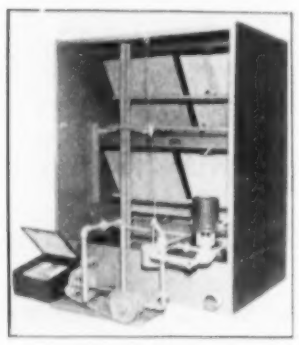
Tube bends can be made to a 9½-in. radius, measured on the work center line, with this new design in the company's air-operated bending machine, previously described IEN-11598-50. The new machine can be set up also for light angles, channels, solid bar stock in section equivalent to its 1¼-in. 16-gage steel tube rating, employing suitable dies for the purpose.

The rotating head now rides on needle bearings. The machine is capable of continuous production work, making as many as 1,000 bends per hour. Operation is characterized by the clamp action that takes place just before the bend starts, without requiring operator attention, and by the ten-position indexing stop mechanism with which bends can be set up for successive production in a predetermined sequence.

If you write maker identify as IEN - 6368

DUST COLLECTING . . Air filter with timer controlled wash mechanism

Source: FARR CO.
P. O. Box A-10187, Airport Sta., Los Angeles 45, Calif.



Safe and efficient

Automatic cycle of operation, wash and re-oil is maintained by this new design of the Far-Air filter previously described IEN-7122-49. At the same time, test buttons can be operated to actuate washing and re-oiling without disturbing the automatic cleaning cycle. There is also a new spring actuated drain that will take out water in the lines to protect against freezing.

The filter mounts a specified number of 20 by 20 by 4-in. panels inclined 30 deg. toward the incoming air. At a predetermined interval, the entering faces are water washed and sprayed with new oil to keep the filtering action free. The assembly includes a "deluge" valve in the water line. It is held closed for normal operation by a cable and fusible link. The link melts, if safe operating temperature is exceeded, to release the valve and flood the filter panels.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Keep your catalog file current with the new literature—page 78

If you write maker identify as IEN - 6369

O-M CYLINDERS air • hydraulic

Smoother operating!.. THE LOWEST COEFFICIENT OF FRICTION OF ANY CYLINDER!

For efficient performance at low pressure, the O-M Cylinder really stands out! Smoothness of bore (4 to 7 micro-inches), and self-adjusting packing reduce friction . . . floating-cushion noses *eliminate binding, dragging, jerking.* This assures a smoother stroke at low or high speeds. And every O-M Cylinder is ALL cylinder! *Interlocking* mechanism does away with projecting tie rods and end caps, saving up to ½ installation space, and permitting the use of a more powerful cylinder for the job. Easier to install and repack. End plugs tapped for universal mounting—with a complete range of mounting brackets, interchangeable bore for bore. All machined steel, with bearing bronze (no castings)—easily turned down to fit in deep recesses of machines or bases.

Available in full range of sizes (1½" to 8" bores), with standard, 2 to 1 or oversize rods. Completely interchangeable parts. FREE catalog and set of ½ and ¼-scale templates show all cylinders and mounting brackets.

14-day delivery on most sizes

FREE CATALOG and Templates

ORTMAN-MILLER MACHINE CO.

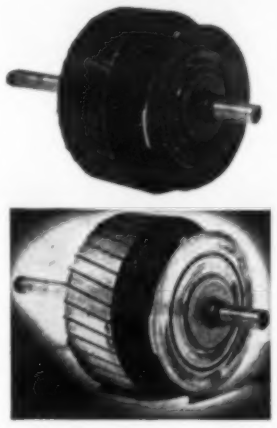
1208 150th Street, Hammond, Indiana

If you write maker identify as IEN - 6370

CLEANS ELECTRIC MOTORS

WITHOUT DISASSEMBLY . . .

REMOVES DIRT and GREASE WITH FILM-FREE RESULTS



Brulin Solvent Degreaser is harmless to rubber, and because it is a non-conductor of electricity, motors may be cleaned by immersion and by running while immersed. Dirt and grease are removed with no film deposited. Periodic maintenance of motors by cleaning prevents build-up of "varnishes" common in electric motors. Non-toxic and relatively non-inflammable. Ideal for maintenance of motors used in air-conditioning and circulatory systems where air flow deposits dirt and dust due to magnetic attraction.

Write today for more complete information

BRULIN Solvent Degreaser

BRULIN & COMPANY, INC.
2938 COLUMBIA AVENUE - INDIANAPOLIS 7, INDIANA

If you write maker identify as IEN - 6371

Send for this free bulletin

—shows how new *Arcair* TORCH GOUGES, GROOVES, CUTS and BEVELS all metals at lower cost!

Here are facts and photographs that demonstrate the time and money saving performance of the Arcair Torch in metal fabricating plants, foundries and for many kinds of maintenance work. Arcair uses only electric arc and compressed air, operates at far lower hourly cost than other processes.

Write today for free bulletin and name of nearest dealer.

***Arcair* COMPANY**

2614 BURWELL STREET BREMERTON, WASHINGTON

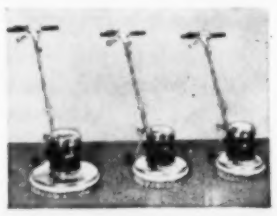
Dealers in all principal cities.

If you write maker identify as IEN - 6372

Scrub, Wax, Polish, All Floors Faster, Easier, Better

Maintain you floors with UNICO, America' finest, most versatile floor machine. Scrubs all floors, instantly converts into a wet-scrubber. Brushes and attachments quickly interchangeable for waxing, polishing, sanding, buffing, steel-wooling, etc. DRY-VAC attachment picks up dirt while polishing. Get the most for your floor machine dollar . . . get UNICO!

Models For Every Requirement . . . 12" to 20" Brush Sizes



Scrubs all Floors • Shampoos Carpets on the Floor

Send Now For Details On The Complete Unico Line

UNICO UNITED FLOOR MACHINE CO., INC.
7711 South Chicago Ave. Chicago 19, Illinois

If you write maker identify as IEN - 6373

THIS number

brings you THIS 42-page catalog

telling you how to get up to 6 to 1

savings on ball bearings

Millions of dollars are wasted because an important principle of bearing design is ignored. This catalog describes the principle and shows you how to save up to 85% on many bearing purchases. Write for it today.

The oldest, largest manufacturer of "Commercial" Ball Bearings

SCHATZ "Commercial" BALL BEARINGS

THE SCHATZ MANUFACTURING CO., 6750 Fairview Ave., Poughkeepsie, N.Y.

If you write maker identify as IEN - 6374

When Flying Freight

AETNA Plywood LIGHTENS THE LOAD

Nowadays just about every kind of product is shipped by air freight. Dollars in shipping costs are saved by manufacturers who lighten the load by using AETNA utility plywood for crates and boxes.

Leading makers of aircraft, too, lighten the weight of planes by using AETNA plywood for cabin walls, instruments panels, propeller blades and many other parts.

AETNA—*and only AETNA*—carries plywood from mills all over the world. Out of this wide range of stock AETNA furnishes plywood for any industrial or decorative use. Tough as many metals and *lighter in weight*, AETNA plywood costs less per square foot than any material you can compare with it.

AETNA'S engineering staff provides technical help so important to the efficient application of plywood. This service is FREE.

Call your nearest AETNA office or branch warehouse, or write, for prices, information and technical plywood help.

AETNA PLYWOOD & VENEER CO.

1724 N. Elston Ave. • Chicago 22, Illinois

ARmitage 6-7100

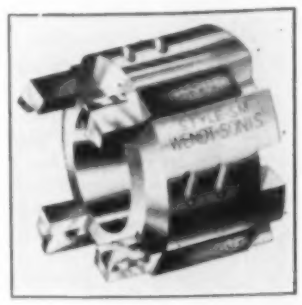
BRANCH WAREHOUSES: Grand Rapids 7, Mich.; Indianapolis 2, Ind.; Rockford, Ill.

PLYWOOD for every purpose — every industry

If you write maker identify as IEN - 6376

MILLING . . Shell mill cutters with carbide tipped inserted blades

Source: WENDT-SONIS CO.
Collier & Tenth Sts., Hannibal, Mo.



Catalog 53

The blades and slots in this new Style SM shell mill are ground on their matching sides to provide a precision locating fit. Set screws hold the blades in place. Carbide cutting edges are diamond lapped. Two styles of blade are available for steel and for cast iron and non-ferrous materials. Two styles for each blade mount a 10-deg. and a 0-deg. cutting angle. Blade shank dimensions are ⅝ by ⅝ by 2¾. Mill diameters are 3 to 6 inches. The 3 and 4-in. sizes take four blades. The 5 and 6-in. sizes take six blades.

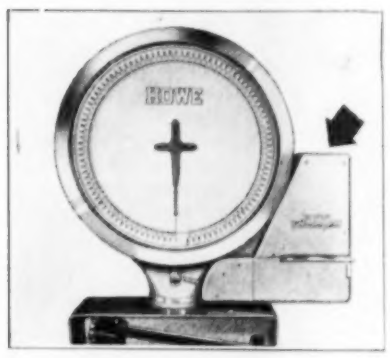
The blades are removable for free-hand grinding to a template. They also can be precision ground in the steel cutter body. The free-hand grinding template is available to specification. Two body types include the Type SM illustrated and a shank equipped universal fly-cutter known as Type UC. The taper shank on the latter is fitted with a No. 40 to No. 50 standard NMTB taper. The illustrated unit mounts on a 1 by 1-in. to 2 by ¼-in. Type-C arbor.

The company has prepared a new catalog and price list covering its reamers, drills, counterbores and spotfacers, end mills, centers, milling cutters and shell mills, rotary files and solid carbide tools, tool bits, carbide blanks, diamond files. Technical data are included.

If you write maker identify as IEN - 6377

WEIGHING . . Record printer in built-in assembly in Howe scale

Source: HOWE SCALE CO.
1041 Strongs Ave., Rutland, Vt.



Trouble free operation

Record tickets, for gross, tare, net weights, single and double roll tapes to feed out or wind up inside the housing, motor or manual operation, can be specified for the new Mechanoprint scale attachment. It locates on the right-hand side of the scale dial, prints upon pushing lightly on a bar. The complete printing action requires one second. Accuracy is within 0.1 per cent of the dial chart capacity.

The standard assembly, for straight ticket printing, takes a 5 by 7-in. ticket and employs a 110-volt 60-cycle ac. motor. Several copies can be printed legibly depending on the ticket thickness and the carbon paper. A manual date stamp can be added to print the day, month and year or an electric time and date stamp to print the minute, hour, am., pm., month and year. The standard printer carries eight banks of numerals, 10 numerals to a bank.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6378

INDUSTRIAL TRUCKS

. . . how to tell when they are

Busy?
Idle?
Lifting?
Engine Running?

PUT ON

Servis Recorders

A couple of screws or bolts does the job. Then the truck itself *writes its own story!*

THE CHART

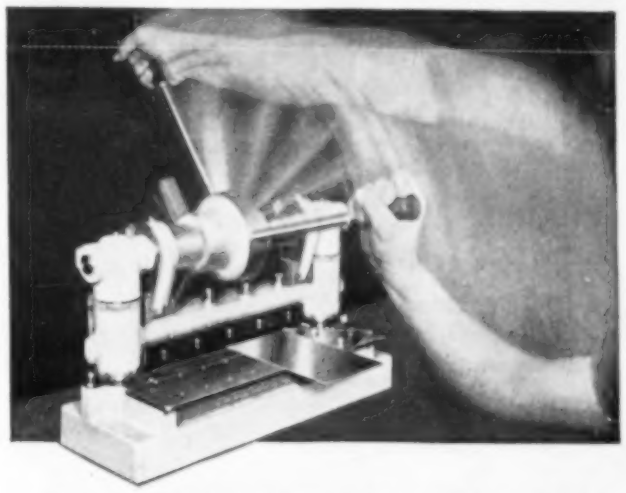
Wax covered, no ink or pencil needed; a sapphire stylus marks the record—a picture of the day's work at a glance.

SERVIS RECORDER—closed. Just bolted on—no connection with any moving part.

Write for Bulletin IT

THE SERVICE RECORDER COMPANY
1375 Euclid Avenue • Cleveland 15, Ohio

If you write maker identify as IEN - 6379



Want PRECISION SHEARING at *HIGH SPEED?*

Here's Why You'll Want a Versatile DI-ACRO SHEAR

- **PRECISION**—strips less than .025" wide accurately sheared, parts exactly duplicated.
- **CUTTING SPEED**—rivals that of power machines.
- **RATED CAPACITY**—16 gauge.
- **EASY TO OPERATE**—a woman can operate it.
- **PORTABLE**—easy to move.
- **FOUR MODELS**—6 to 24 inches wide. Four power models.
- **ENGINEERING SERVICE**—always at your disposal.
- **RUGGED**—one year warranty.
- **DELIVERY**—excellent.
- **COST**—that's good too.

SEND FOR 32-PAGE CATALOG

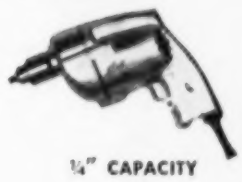
O'NEIL-IRWIN MFG. COMPANY
318 8th Ave. Lake City, Minn.

di-acro PRECISION METALWORKING MACHINES

If you write maker identify as IEN - 6380

YOU CAN'T STALL THIS DRILL IN HARDEST STEEL!

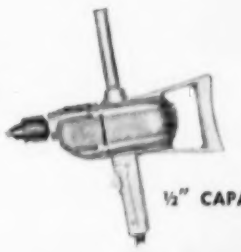
IT'S A *Thor*



¼" CAPACITY

COPPER *Line*

Low priced drills for intermittent drilling jobs in the home, garage, workshop. Drive hole saws, wire brushes, grinding wheels, etc. Die cast aluminum housings . . . self-lubricated bearings.



½" CAPACITY

use Good tools *Thor*

PORTABLE POWER TOOLS

THOR POWER TOOL COMPANY
AURORA, ILLINOIS

ELECTRIC DRILLS | IMPACT WRENCHES | ELECTRIC SAWS | ELECTRIC HAMMERS

If you write maker identify as IEN - 6381

Hear Here!

Model 211 Floor Booth

Loudness Reduced 50%* Inside a BURGESS-MANNING ACOUSTI-BOOTH

In the hushed interior of this roomy, airy acousti-booth you hear easily while telephoning. Walls of thick, sound absorbing material, and patented construction reduce the loudness of noise by 50%.

When you invest in a Burgess-Manning Acousti-Booth you are purchasing better communications . . . good hearing means fewer errors.

** Based on studies by a prominent research organization.*
Write for Bulletin A-107

BURGESS-MANNING COMPANY

Architectural Products Division

5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 6382

MARSH MAKES IT!

If it's a pressure gauge or dial thermometer, Marsh makes it . . . and makes it better. The types, ranges and case styles are endless. What is "special" to other instrument makers is often standard to Marsh. To know the scope of Marsh instruments—

Write for this fact-filled catalog

MARSH INSTRUMENT CO.,
Sales affiliate of Jas. P. Marsh Corporation,
Dept. A, Skokie, Ill. Export Dept., 3501 Howard St., Skokie, Ill.

If you write maker identify as IEN - 6383

WED YOUR NEW EQUIPMENT TO PICS *for a Happy Union!*

PIC STEEL UNIONS blend perfectly with appliances because they're bright, gleaming, good looking. Functionally they're strong—ends are heavy steel pipe coupling stock, uniformly flat-sided for rapid installation with open end wrenches. Special wedge type bronze seat gives tight, safe closure. 100% zinc plated (including threads) to protect against rust. Pics are priced right — less than a galvanized, no more than a black malleable union!

For 150 lb. service — write for FREE Samples
DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

If you write maker identify as IEN - 6384

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

$2 each

gives up to 2000 readings

it's this simple:
- Select the Tempilstik° for your working temperature.
- Mark your workpiece with it.
- The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
11 West 25th St., New York 10, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —16¼" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME _____
COMPANY _____
ADDRESS _____

Booth 125, Welding & Industry Exposition, Houston, Texas

If you write maker identify as IEN - 6385

FORMING . . Beading machine forms edge of plastic sheet materials

Source: TABER INSTRUMENT CORP.
107 Goundry St., North Tonawanda, N. Y.

Bulletin 4703

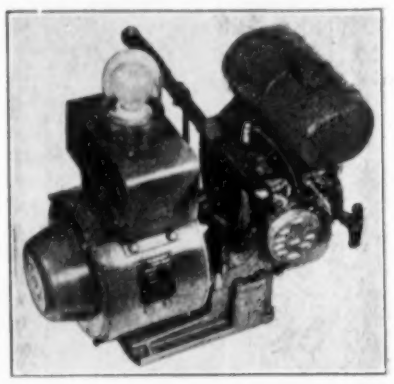
Model 144 is a new Thermobeader machine to form a bead on one edge of a plastic sheet or strip. It can be employed on cellulose acetate, ethyl cellulose, vinyl acetate, cellulose nitrate sheet measuring 0.005 to 0.020 in. in thickness. Operation is at 500 to 1,000 ipm. depending on thickness and type of material.

The sheet stock rides against an adjustable gage at the feed end of the machine. It moves between dual steel conveyor bands to be carried through preheating and forming dies controlled by a thermostat. The beaded work passes through a cooling die that sets the size and emerges ready for further fabrication. Nine standard beads can be formed on straight edges, cut blanks or roll materials of the plastics named.

If you write maker identify as IEN - 6386

GENERATORS . . Engine driven ac. and dc. units for utility purposes

Source: PORTER-CABLE MACHINE CO.
18 Exchange St., Syracuse 8, N. Y.



For lights, tools

Rating is 1,500 watts, on 110-volt ac., in a Model 118 and the same rating, for dc. output, on Model 119 in the company's two new portable engine driven generators. Each is equipped with a 3-hp. single cylinder engine and four electric outlets. The ac. assembly weighs 135 pounds. The dc. unit weighs 75 pounds. Both can be employed for utility lighting on construction jobs and in locations where normal electric circuits are not available. Both are suitable for portable tool drive within their capacities.

Identify as IEN - 6387

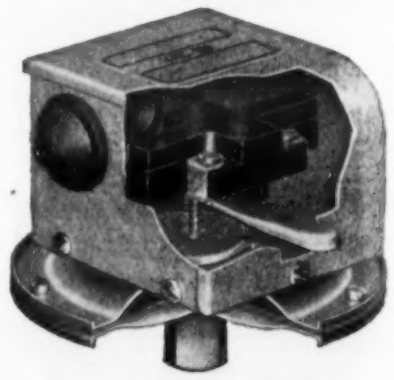
Marshall Tool and Supply Company, in California, has established a novel distributor business specializing in special tools. Examples are special thread dies, decimal size reamers, special thread gages, extra long drills, special milling cutters, high speed knurls, carbide tipped tools. Recently the company printed a 20-page circular showing selected items from its complete 600-page catalog.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6388

A PAID NEWS ADVERTISEMENT BY JAY-CON ASSOCIATES

VACUUM SWITCH . . New, Low-Cost Device Prevents Dry Pump Operation



Low Cost Simple to Operate

A new, low-cost automatic vacuum switch designed as a "watchdog" for equipment operating on limited liquid transfer or vacuum applications has been marketed by Jay-Con Associates, Minneapolis, Minnesota. The new switch prevents "dry operation" of electric or gasoline powered pumps, drills and similar equipment by cutting current when liquid or vacuum supply stops. Termed the Vac-On Vacuum Switch, it operates on a spring loaded, rubber diaphragm principle. The switch, mounted on the suction line, is wired into power supply or spark system. Model 35-2 operates with electric motors up to 2 H.P. on AC or ½ H.P. on DC current, while Model 35-5 is effective on any gasoline-powered engine. When suction falls below a predetermined negative pressure, the Vac-On switch automatically cuts off the power source. Silver contact points are utilized for heavy-duty service and a small hand lever allows manual re-start.

For further information including prices, write Dept. 201, Jay-Con Associates, 404 Washington Avenue, Minneapolis 1, Minnesota.

If you write maker identify as IEN - 6389

High Speed Stud Driving

- **A FAST OPERATION TIMED IN SECONDS!**

This tool is used by a majority of plants where stud driving is done on a high production basis. Can be operated at any speed which is safe for driving the stud. (It is not necessary to stop rotation at any time.)

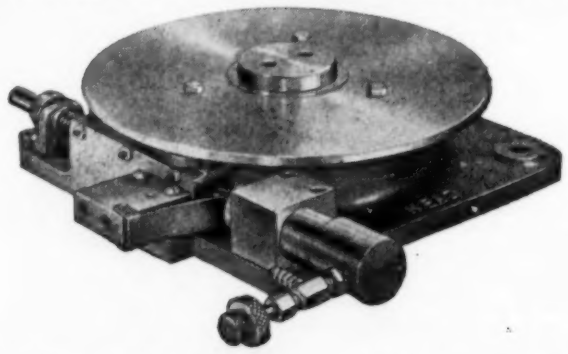
- AUTOMATIC TAKE-UP FOR WEAR ON JAWS
- REVERSING POSITION OF CLUTCH GIVES DOUBLE WEAR AT HALF COST
- AFFORDS ACCURATE PROJECTION HEIGHTS
- USE WITH ANY AIR OR ELECTRIC DRILL OR DRILL PRESS

Write for Free Literature, TODAY!

TITAN TOOL CO.
Production Tools
52 Main St., FAIRVIEW (Erie County), PA.

If you write maker identify as IEN - 6390

Air Operated ROTARY WORK FEEDER



Deftly holds and delivers small parts to drill, tap, swage, stake, etc. Stations accurate to .002". Guaranteed against over-travel or "skipping." Indexes as slow or fast as you like, up to 10,000 per hour. Compact and sturdy, easy to tool and hook up.
Standard dial plate 10"; available in 12". For a new job, simply tool up a new dial. Readily combines with "MEADMATIC" Timer, Air Hammer, Air Press, Drill Presses, etc.—to make almost completely automatic machines—operator merely loads.

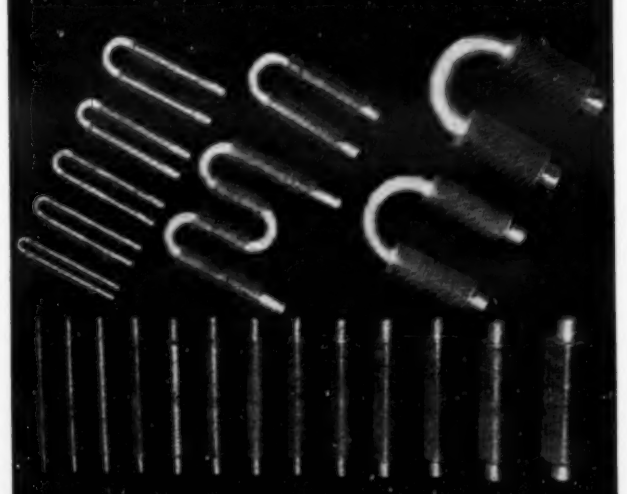
Write for full details.

MEAD SPECIALTIES COMPANY
4114 N. Knox Ave., Dept. EA-63-A, Chicago 41, Ill.

If you write maker identify as IEN - 6391

RO-FIN TUBES

IDEAL SURFACE FOR HEAT TRANSFER



Over 100 sizes in production!

ROME TURNEY RADIATOR COMPANY
200 East Front Street • Rome • New York

If you write maker identify as IEN - 6392

A TOOL BOX AT YOUR FINGERTIPS

52-1

INTERCHANGEABLE COUNTERBORE SETS

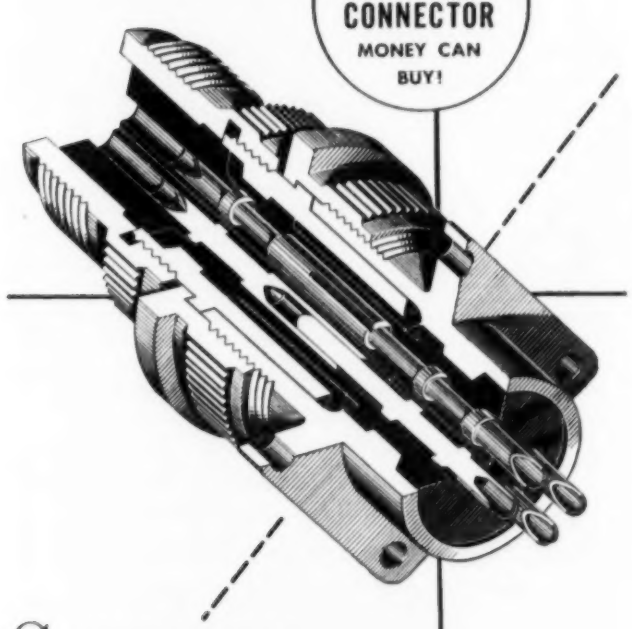
Continental Interchangeable Counterbore sets give you a wide variety of cutting tools in a compact, convenient form. Three sets are available, for the large or small toolroom. Each set features the famous Continental indestructible drive that will not stick, will not break, and is always hand detachable. Full details are given in Bulletin B 47-37. Send for your copy.

CONTINENTAL TOOL WORKS
Division of Ex-Cell-O Corporation
Detroit 32, Michigan

CTW

If you write maker identify as IEN - 6393

The Finest ELECTRICAL CONNECTOR MONEY CAN BUY!



SCINFLEX ASSURES LOW MAINTENANCE BECAUSE IT PERMITS SIMPLICITY

When operating conditions demand an electrical connector that will stand up under the most rugged requirements, always choose Bendix Scinflex Electrical Connectors. The insert material, an exclusive Bendix development, is one of our contributions to the electrical connector industry. The dielectric strength remains well above requirements within the temperature range of −67°F to +275°F. It makes possible a design increasing resistance to flashover and creepage. It withstands maximum conditions of current and voltage without breakdown. But that is only part of the story. It's also the reason why they are vibration-proof and moisture-proof. So, naturally, it pays to specify Bendix Scinflex Connectors and get this extra protection. Our sales department will be glad to furnish complete information on request.

• Moisture-Proof • Radio Quiet • Single Piece Inserts • Vibration-Proof • Light Weight • High Insulation Resistance • High Resistance to Fuels and Oils • Fungus Resistant • Easy Assembly and Disassembly • Fewer Parts than any other Connector • No additional solder required.

BENDIX SCINFLEX
ELECTRICAL CONNECTORS

Bendix

SCINTILLA MAGNETO DIVISION of
SIDNEY, NEW YORK

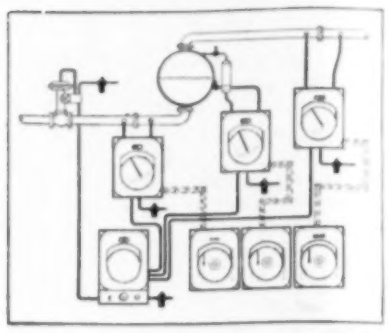
Bendix AVIATION CORPORATION

Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.
FACTORY BRANCH OFFICES: 118 E. Providencia Ave., Burbank, Calif. • Stephenson Bldg., 6560 Cass Ave., Detroit 2, Michigan • Brouwer Bldg., 176 W. Wisconsin Avenue, Milwaukee, Wisconsin • 582 Market Street, San Francisco 4, California

If you write maker identify as IEN - 6395

CONTROL . . Three element assembly to safely maintain boiler water level

Source: PENN INDUSTRIAL INSTRUMENT CORP.
4108-12 Haverford Ave., Philadelphia 4, Pa.



Catalog 1020

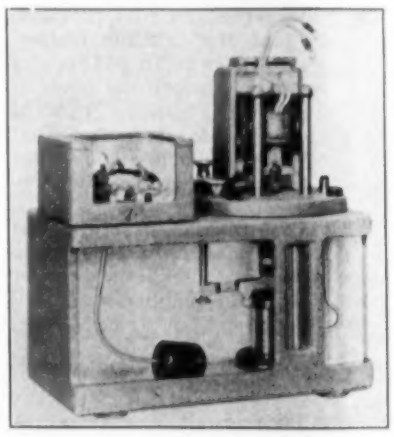
Illustrated is one of several arrangements in a new three element assembly of Penn flow meters, liquid level meters and electronic recording meters with pneumatic transmitters to maintain boiler water level at a constant predetermined point under rapidly fluctuating load. Feed water flow is controlled to follow steam flow so sudden load changes in steam demand will be reflected immediately in change of water flow. Superimposed on this action is the slower secondary control dictated by actual water level change acting through the third of the three elements.

The steam flow, water flow and level are all measured by the Penn meters equipped with pneumatic transmitters to send three independent loading signals to the air-operated three-element controller. It consists essentially of a differential linkage operated by the pneumatic signals. The differential remains in equilibrium as long as the feed water input equals the steam output. The linkage operates the control when the feed water input rises above or falls below the steam output. The drum level signal provides an adjustable biasing action for the control assembly.

If you write maker identify as IEN - 6396

LUBRICATING . . Oil reservoir, solenoid operated pump, 6 to 24 drops

Source: BIJUR LUBRICATING CORP.
149-53 W. Passaic St., Rochelle Park, N. J.



Cut-away view

Reciprocating pump, operated by a solenoid, is immersed in oil in the reservoir of this new lubricator. The pump can be adjusted to deliver 6 to 24 drops per stroke. A float operated switch can be specified to sound an audible alarm or show a visible one when the oil supply is low. Then, if the supply is not replenished, the switch will shut off the machine served by the lubricator.

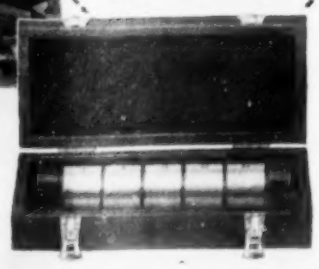
Type E is the designation. Solenoid rating is 4 amp. on 110-volt ac. Recommended maximum frequency of operation is four strokes per minute. The solenoid can be operated by switches tripped by rotary or reciprocating motion, by existing control circuits, by electronic timer controls or by push buttons. Two reservoir capacities are 3 and 6 pints.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6397

Check Surface Roughness Waviness and Lay INSTANTLY
. . . Right At The Machine

With ACME'S ROUGHNESS COMPARISON SPECIMENS



Consists of various surface specimens, *individually finished* to definite micro-inch readings, grouped together in one handy comparison bar. Merely hold bar opposite work for fast, visual comparison check of surface roughness, waviness and lay.

Available in groups of 3, 5 and 8 specimens. Low cost. Write for details, now!

Mfr's. of Drill Jig & Fixture Bushings

ACME INDUSTRIAL COMPANY

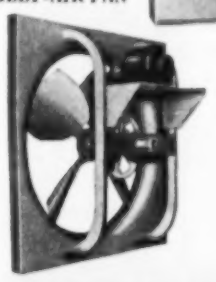
215 N. Laflin St. Chicago 7, Illinois

THE SERVICE SHOP TO INDUSTRY FOR OVER A QUARTER CENTURY

If you write maker identify as IEN - 6398

NEW, "Buffalo" DISK FANS DO MORE JOBS BETTER!

Above, NV HEAVY DUTY BREEZO FAN
Right, NV BREEZO FAN
Below BELT-AIR FAN



Sizes from 550 cfm to over 90,000 cfm! For free air delivery or system resistances as high as 1" static pressure! The attractive new NV-BREEZO covers 8" to 24" size range. The high-efficiency BELT-AIR and HEAVY-DUTY NV-BREEZO cover 24" to 84" sizes. Models for vertical shaft operation — for high and low temperatures, corrosive and explosive atmospheres. Write NOW for Bulletins 3865 and F3790 on these new, versatile fans!

BUFFALO FORGE COMPANY
496 Broadway Buffalo, N. Y.
Publishers of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ontario
Sales Representatives in all Principal Cities

If you write maker identify as IEN - 6399

NEW T-J Spacemaker AIR CYLINDERS

Saves up to 40% Space!

Streamlined construction of the new T-J Cylinders *eliminates tie rods . . . reduces head size . . .* and *saves up to 40% in mounting space!* In addition, a new high in strength is achieved with solid steel heads and heavy wall seamless steel body . . . leakproof construction . . . extra high safety factor. Cylinder walls are precision honed and hard chrome plated for long-life efficiency. Available with new T-J Super Cushion Flexible Seals. Many standard sizes and styles . . . cushioned and non-cushioned . . . for pushing, pulling, lifting, clamping or control jobs. Write for bulletin 8152. The Tomkins-Johnson Co., Jackson, Michigan.

37 YEARS EXPERIENCE T-J
TOMKINS-JOHNSON
DIVISIONS: AIR AND HYDRAULIC CYLINDERS · CUTTERS · CLINCHERS

If you write maker identify as IEN - 6400

SAFELY LIFTS 13.9 to 25 TONS

With reserve strength beyond its rated capacities, Koehring heavy-duty 304 safely lifts 13.9 tons on crawlers, has 35 to 75-ft. boom. As a rubber-tired truck or cruiser crane it lifts up 25 tons, has max. 110-ft. boom with jib. Big clutch and spring-loaded brake automatically hold boom with max. load. Other sizes to 79½ tons.

KOEHRING CO.
Milwaukee 16, Wis.

KOEHRING *Cranes*

If you write maker identify as IEN - 6401

TYPE 67
With handwheel adjusting screw.

TYPE 67 FR
Combination filter regulator.

Nationwide Swing to

FISHER SERIES 67
SMALL VOLUME REGULATORS

AN ALL-PURPOSE REGULATOR PARTICULARLY ADAPTED AS AN AUXILIARY OPERATING MEDIUM PRESSURE REGULATOR

- ACCURATE, EFFICIENT REGULATION
- TIGHT CLOSURE • WILL NOT CHATTER, VIBRATE OR SING • NEAT DESIGN

CAPACITY UP TO 6 C.F.M.
WRITE FOR FISHER BULLETIN 67

FISHER GOVERNOR COMPANY
Marshalltown, Iowa

FISHER
LEADS THE INDUSTRY IN RESEARCH FOR BETTER PRESSURE CONTROL

If you write maker identify as IEN - 6402

COME
Clean with a Clarke

Thirty-five years of Clarke know-how are built into Clarke floor maintenance machines to do your cleaning easier, faster and better. A Clarke does the job month after month without repair expense because it's job-designed and built for years of rugged service. That's why you should investigate Clarke before you consider any other floor maintenance equipment.

WD-23 WET-DRY VACUUM

No cleaning job — wet or dry — is too big for the WD-23 Wet-Dry Vacuum. Heavy porcelainized tank, inside and out, resists rust. Handy dump valve eliminates heavy lifting. Handy attachments available. Model WD-15 for smaller area jobs.

P-17 FLOOR MAINTAINER
(With Water Tank Attachment)

Scrubbing a floor spotlessly clean is no chore for this Clarke P-17 floor maintainer (shown with water tank attachment, available at slight extra cost). Works easily on any type floor.

Clarke SANDING MACHINE COMPANY
284 East Clay Avenue, Muskegon, Mich.
Authorized Sales and Service in Principal Cities

SEND TODAY!

Send this coupon for full, colorful details on Clarke floor maintenance equipment that will save you working time — and money.

Clarke Sanding Machine Company
286 East Clay Avenue, Muskegon, Michigan

Please send me full details on Clarke equipment and the name of my nearest dealer.

NAME_____
ADDRESS_____
CITY_____ ZONE____ STATE____

If you write maker identify as IEN - 6404

VALVE . . Reseating relief design to protect hot water storage tanks

Source: A. W. CASH VALVE CORP.
6612 E. Wabash, Decatur 60, Ill.

Prevents explosion

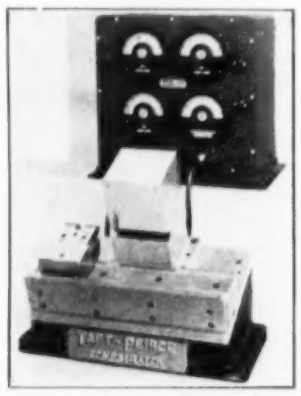
Both pressure and temperature actuated elements are employed in this new Series-V Econo-Therm relief valve. Standard setting is for 125-lb. pressure and for 208-deg. F. temperature. Above these points the valve will open its ½-in. side exhaust connection. Inlet, at the bottom, is threaded for ¾-in. connection in the top of a water tank. Following opening action, the valve will close drip tight, when the water has become sufficiently cool to eliminate danger.

The valve is AGA Approved and is available in either regular or stem type and in plain or lever equipped construction. The regular valve is for ordinary hot water storage heaters. The stem type is recommended for electric heaters, insulated tanks and installations where close nipples cannot be used.

If you write maker identify as IEN - 6405

GAGE . . Pneumatic comparator checks root section of turbine blades

Source: TAFT-PEIRCE MFG. CO.
32 Mechanic Ave., Woonsocket, R. I.



Fast inspection

CompAIRator trade names pneumatic gaging equipment, now available in a new multiple assembly, to check dimensions over the root section of jet engine turbine blades. The four-gage unit, shown in the illustration, includes provision to take the grinding fixture, with a blade in place, for inspection before the blade is accepted from the grinding operation. A companion unit checks the blades alone after they come from the final operation.

Dial graduations on the four air indicators are 0.0001 inch. Three indicators check dimensions. One checks variation of dimensions from indicators 1 and 2 from nominal size.

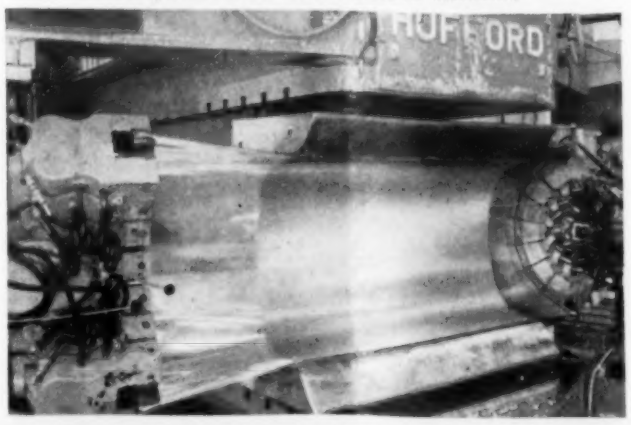
Identify as IEN - 6406

Monsanto Chemical Company has released information on its new synthetic soil conditioner to help control erosion due to rain and wind on construction sites, rights of way. Bondite is the trade name. It holds soil and seed in place until vegetation cover crops germinate and become established. Application can be made in powder form or as a solution at about one pound per 100 square feet of surface. The degree of slope should be 2 to 1 or less. Length should be 50 feet or less. There's a booklet on the subject.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6407

Better skin fits—Lower costs with
Hufford Hydra-Curve...
The jaws with the flexible action!



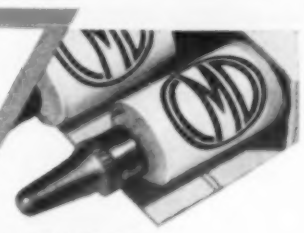
Especially designed to simplify formation of all parts stretch-formed from sheet stock. Jaw curves easily match convex, concave or compound die curves. HYDRA-CURVE JAWS cut material costs as much as 30%—pay for themselves in material savings alone! Many aluminum parts now formed in ST condition—no heat-treat necessary. Useful on shallow curves, a *necessity* on most deep curves! *Adaptable to most sheet stretch-presses. Sizes for all Huffords.*

Write for new folder!

HUFFORD
Machine Works Inc.
EL SEGUNDO, CALIFORNIA

If you write maker identify as IEN - 6408

read what users say



about **CMD**
anti-scoring lubricant

Among technical men all over the country, CMD has become the standard for extreme pressure, anti-scoring lubrication. These men have found that they can get more efficient lubrication for a longer time . . . . . and get longer life out of their equipment too. People who have used and tested CMD are your best proof of its reliability.

"We have been using your Anti-Scoring Center Point Lubricant on all ejector, return and guide pins: and we highly recommend this lubricant to anyone having trouble with scored and broken pins of this type on die cast dies."
Die Manufacturer

"We have tried out your CMD Anti-Scoring lubricants in both grease and oil in comparison with another brand claiming to be the world's best, for the purpose. We are happy to report that we have found your product superior in remaining in its protective position under sustained heavy loads for the longest periods of time of any material we have tried for this purpose."
Engineering Consultant

"Some time ago you very kindly sent to us some samples of your CMD Center Point Lubricants. These have been carefully tested in a number of applications besides the lubricating of centers, and we are pleased to say that the results have been very satisfactory even in cases where other well known high pressure lubricants have failed in a very short time."
University Dept. of Physics

Sample Kit Available for Your Trial

CHICAGO MANUFACTURING & DISTRIBUTING CO.

1904 West 46th Street, Chicago 9, Illinois

If you write maker identify as IEN - 6409

Used in this typical application for sensing temperature of hydraulic oil.

just right for your job!

BENDIX-FRIEZ
high-precision thermistors

As temperature measuring elements and liquid level sensors, these temperature responsive resistors are the best you can buy. In standard or special types, their high-precision manufacture makes them precisely right for your job when it comes to resistance values, size, temperature coefficient, mountings and quality. Ask us about applications.

STANDARD TYPES FOR IMMEDIATE DELIVERY

Size (inches)	@ +30°C.	@ 0°C.	@ −30°C.
.140 x .75	45.0 ohms	86 ohms	194 ohms
.040 x 1.5	12,250 ohms	26,200 ohms	65,340 ohms
.018 x 1.5	35,000 ohms	82,290 ohms	229,600 ohms

Write for details.

FRIEZ INSTRUMENT DIVISION of Bendix Aviation Corporation
1428 Taylor Avenue, BALTIMORE 4, MARYLAND
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

If you write maker identify as IEN - 6410

Today's best buy for clerical savings on payroll, inventory and cost records

Send for facts on the new Remington Rand LOW-COST bookkeeping machine.

Free booklet tells you how to get

1. Complete description
2. Complete figuring
3. Complete records
4. Touch-method speed
5. Typewriter simplicity

Small or large plant, you can cut your overhead and keep your records up-to-date with this new low-cost machine accounting method. All the basic money-saving advantages of a top-price descriptive machine are yours for only a fraction of the original investment.

Write direct to Remington Rand Inc., Room 2818, 315 Fourth Avenue, New York 10, N. Y. for your copy of folder AB664 or use the Reader Service Form herein.

If you write maker identify as **IEN - 6411**

this single unit sprays everything!

Champion ALL-METAL ELECTRIC SPRAY GUN

NO COMPRESSOR REQUIRED!

Just plug it in and spray!

This Champion Spray Gun is all you need for all industrial spraying applications. Thousands now in use by America's largest companies to cut labor and equipment costs and increase workmanship quality on intermittent applications.

HEAVY DUTY Gun & Container, Neoprene Cord & Plug . . . entire unit UL approved.

$17.95 (Chrome Plated Gun.. $19.95)

Polished Aluminum Container • Over 90 Pounds Pressure • 7200 Strokes per minute • Efficient Spray-Control Dial • Weighs only 3¾ lbs. • 8-ft. UL Approved Cords • Accurate, Eye-Level Nozzle • Non Corrosive Piston Action • Heavy Duty, 115-V., A.C.

Mail Your Order TODAY to: Literature Available

CHAMPION IMPLEMENT CORPORATION
175 East 87th Street • New York 28

If you write maker identify as **IEN - 6412**

FOR MATERIAL HANDLING—

more and more—the swing is to wide-base pneumatic tires

GENERAL

INDUSTRIAL PNEUMATIC TIRES

More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME • MONEY • LABOR

- MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS
- CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE
- SAVE HIGH COST FLOORS AND FLOOR SURFACES
- SLOW, EVEN WEAR FOR LONG SERVICE
- HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND
- ROLLS EASIER, SMOOTHER OVER ALL SURFACES

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

THE GENERAL TIRE

Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

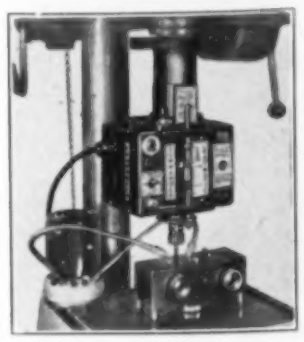
SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as **IEN - 6414**

THREADING . . Reversing head for taps and dies, No. 0 to ¾ inch

Source: COMMANDER MFG. CO.
4221 W. Kinzie St., Chicago 24, Ill.



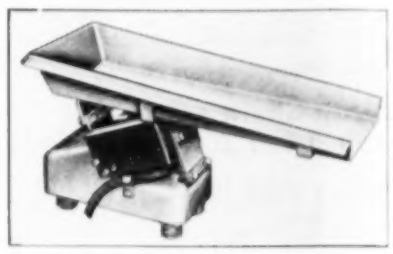
For production use

Lead-Matic trade names a new design of lead screw equipped tapping head. The assembly represents further development of the head previously described IEN-197-48. The lead screw pilots the tap into the work. The spring clutch drive mechanism provides automatic reversal of the tapping spindle. The complete unit applies on the quill of a drilling machine with drive connection to the machine spindle. Control centers at a hand, foot or fixture switch. The hardened and ground lead screws and their mating bronze nuts are quickly interchangeable from one thread size to another.

If you write maker identify as **IEN - 6415**

FEEDING . . Vibrating trough unit for bulk materials to 2 ton per hour

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.



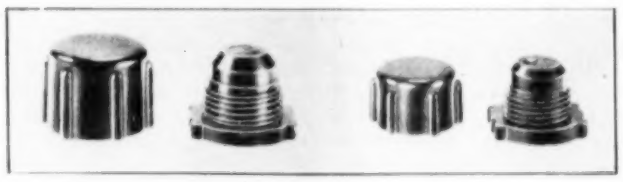
Spring mounted base

Mounting is on leaf springs for the conveyor trough of this new Model F-01 assembly. Feeding action is by electromagnet mounted at right angles to the springs. A rheostat controls the feed rate. Assembled weight is 48 pounds.

If you write maker identify as **IEN - 6416**

PROTECTING . . Plastic plugs and caps for threaded holes and work

Source: UNITED PLASTIC INDUSTRIES
50-54 Brown St., Vassar, Mich.



For pumps, connections, transmissions

Sizes range from ¼ to 1 in., with National Fine and National Coarse threads as specified, in this new line of Uni-Plugs and Uni-Caps. They apply in and on threaded work to fill holes, protect the threads during periods of handling, shipping and storage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6417**

FOTO-FLO* MODEL C PHOTO-COPYING MACHINE

New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 53-37 for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY ROCHESTER 3, NEW YORK Branch Offices in Principal Cities

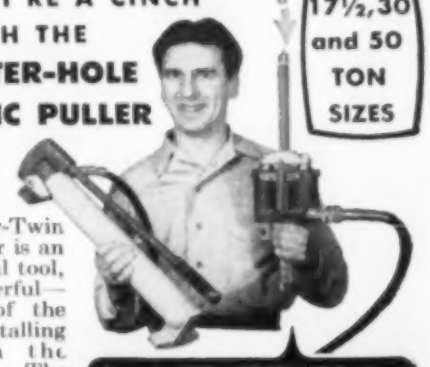
Photocopy Papers • Photo copying Machines • Photographic Papers

If you write maker identify as **IEN - 6418**

TOUGH JOBS! THEY'RE A CINCH WITH THE CENTER-HOLE HYDRAULIC PULLER

OTC

17½, 30 and 50 TON SIZES



Famous OTC CENTER-HOLE Ram permits fast, easy adjustment to the work and interchange from push-puller to sleeve puller to bench press

The OTC Power-Twin Hydraulic Puller is an ideal, economical tool, compact, powerful—handles 95% of the pulling and installing operations in the average shop. The Power-Twin may be detached from press—used as portable ram—speeds up pulling and installing jobs 75%, eliminates torque—remote control provides safety

A complete range and variety of Pullers, Adapters and Attachments are available to pull or install sleeves, bearings, races, gears, pinions, couplings, etc.

Amazingly efficient combination of Portable Pedestal Press and 17½ ton Power-Twin Hydraulic Puller. Every shop will find this unit a must . . . first few jobs pay for it in time, tools and money saved. Move it where you want it . . . it's portable.

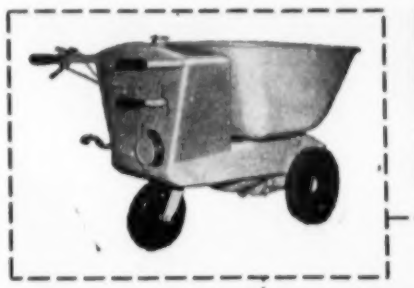
See your OTC jobber or write us . . . today.

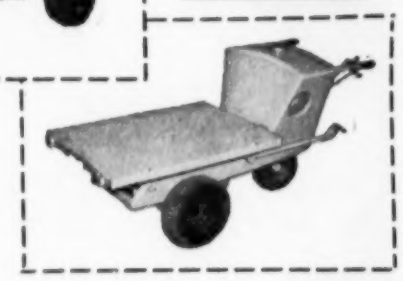
OWATONNA TOOL CO.
371 CEDAR ST. OWATONNA, MINN.

If you write maker identify as **IEN - 6419**

BULK HANDLING

Bell PRIME-MOVER



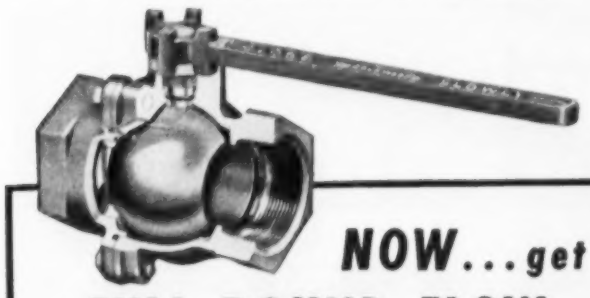


Bucket and Platform interchangeable in a jiffy. Handle up to ¾ ton load — up grades and down — through narrow aisles and doorways.

MOVE your materials — bulk or packaged — with equipment not limited to specific jobs—consolidate those intermittent handling jobs, outdoors or in confined areas — supplement and relieve your specialized equipment and complete the mechanism of your materials handling.

If you're processing bulk materials—disposing of waste and scrap—using materials in maintenance or construction—shifting heavy maintenance equipment—maintaining grounds—or loading, unloading bulk or packaged goods from cars, toss your problems on the Prime-Mover and get the job done—quickly and economically. Prime-Mover Co., Muscatine, Iowa.

If you write maker identify as **IEN - 6420**



NOW . . . get FULL ROUND FLOW

in a quarter turn

Designed to step up valve performance in every detail of operation, Rockwood Ball Valves are making good in a wide range of services. Chief reason is the chrome-plated floating bronze ball that assures a full *round* flow . . . enables quick opening and closing . . . resists wear longer . . . stays leakproof.

Ideal for handling water, air, carbon dioxide, nitrogen and other gases, paraffin and asphalt base petroleums, alcohol, paper fluids and many other types of fluids and gases. Approved by Underwriters' Laboratories, Inc. For further details, send for free Bulletin V-4. Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

ROCKWOOD

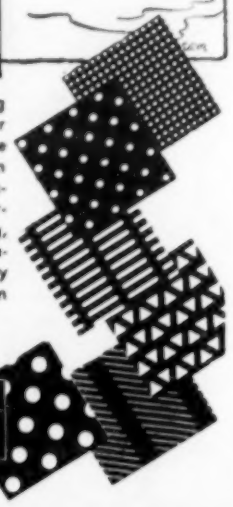
ROCKWOOD FULL-FLOW BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN - 6421

H & K Perforated Holes

A refreshing experience — the ol' swimming hole — and so it will be when you send your perforating problems to us. "If it can be perforated, H & K can do it" is a reputation of which we are proud. Whether your requirements are small or large, we are interested. We specialize in difficult perforating, involving stainless, plastics, small perforations and precision work. In over seventy years our perforating facilities have grown to be the most complete in the country.

Ask for Catalog No. 62 for complete information.



The Harrington & King Perforating Co.

5637 Fillmore Street, Chicago 44, Illinois
114 Liberty Street, New York 6, New York

If you write maker identify as IEN - 6422

Model 218

Defense orders are coming to the clean plants because they can handle production efficiently. Be sure your plant operation is not handicapped by litter, dirt or other debris.

Send today for important Doyle Vac-It information. There's no obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Mich.

If you write maker identify as IEN - 6423

Get This Super-Handy HOIST and PULLER for 30-day Free Trial!

The *Jiffy Lift* Hoist & Puller weighs only 12 lbs., yet has ¾-ton capacity. Single control for up and down. Quick action, ratchet-type. Thousands of enthusiastic users. **$45.00 F.O.B. St. Louis.** Try it a month FREE!

BLACKBURN *Jiffy Lift*

Lightest! Simplest! Fastest!

HUNDREDS OF USES

MAIL COUPON TODAY

JASPER BLACKBURN CORPORATION
35 Madison St., St. Louis 6, Mo.

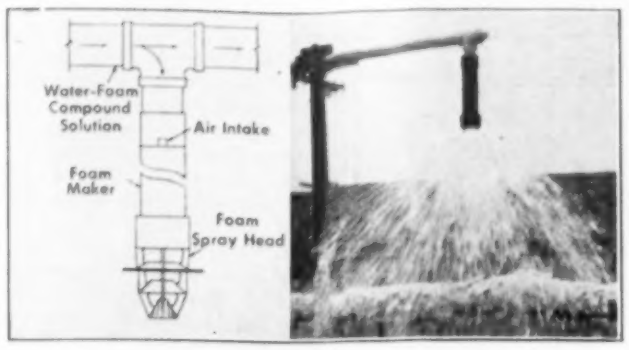
☐ Send us full information about "Jiffy Lift".
☐ Send us one "Jiffy Lift" for 30 Day FREE TRIAL.

Your Name and Title _____
Firm _____
Address _____
City and State _____ IEN

If you write maker identify as IEN - 6424

EXTINGUISHING . . Foam equipment for fixed installation spray heads

Source: PYRENE MFG. CO.
560 Belmont Ave., Newark 8, N. J.



Installed by maker's representatives

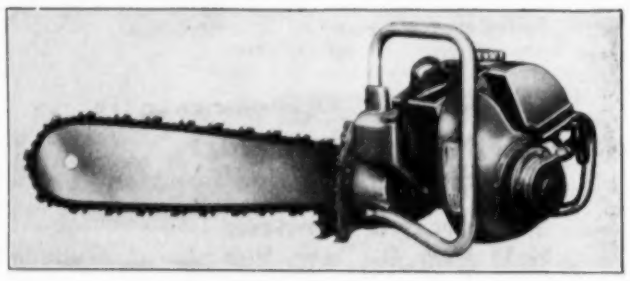
Even pattern of foam, generated at the point of use, is delivered downward from each cone shaped spray head in this new assembly of extinguishing equipment. The heads are located about 4 ft. above the hazard. Coverage ranges from 10 to 20 ft. in diameter depending on pressure. It can range between 30 and 100 pounds.

The company supplies the foam materials and equipment for fire protection of various types. It offers a universal compound for flammable liquids. The foam making head and spray are about 15 in. in length by 2½ in. in diameter. The mechanically formed foam expands to about eight times its original volume. Capacities are 22 and 33 gpm. at 30 lb., 40 and 60 gpm. at 100 lb. in two available sizes.

If you write maker identify as IEN - 6425

WOODWORKING . . Chain saw, engine driven, 16 or 20 in. cutter bar

Source: LOMBARD GOVERNOR CORP.
8 Main St., Ashland, Mass.



Ball and needle bearings

Model 30 designates a new chain saw driven by a 2-cycle air cooled gasoline engine. The saw is available with a 16 or 20-in. bar. It weighs about 35 lb. in the 20-in. size. The saw is for one man operation. List price is about $229.

Identify as IEN - 6426

Non-poisonous, non-selective, non-flammable, non-corrosive, non-costly are the adjectives descriptive of the weed killer made by Pacific Coast Borax Company. It is trade named Borascu. You treat the soil around your plant with it and thus eliminate the chance for disastrous grass fires.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6427

Whether Your Budget is LARGE...

or SMALL...you can afford

ANCO NAMEPLATES

Your products need distinctive ANCO identification, whether you build 100 or 100,000. ANCO engineers understand the sales value of quality nameplates to match the quality of your products. That's why they are realistic in meeting your needs at a cost within your budget. Send us your design for quotation or let us help you develop a quality ANCO nameplate—whether your needs are large or small.

Write for the ANCO catalog today.

CRESTAR ANCO

AMERICAN NAME PLATE & MFG. CO.
4246 W. Arthington • Chicago 24, Illinois

If you write maker identify as IEN - 6428

send for this sample . . . it may open your eyes!

A simple request will bring you a sample of one of the most amazing materials ever developed by science. It is Tufflex, the fiber felt, and it's cutting production costs—adding quality—in many industries today. Tufflex is downy soft—amazingly resilient. It cushions. It withstands heavy impact blows. It insulates. It deadens sound. It is easily fabricated to any size or shape. Tufflex is available in a variety of densities and thicknesses—and in moisture resistant and fire retardant forms. Learn more about the many new uses for Tufflex—send today for your sample and complete information. Wood Conversion Company, Dept. 126-63, First National Bank Bldg., St. Paul 1, Minnesota.

TUFFLEX* A Product of Weyerhaeuser

*REG. U. S. PAT. OFF.

If you write maker identify as IEN - 6429

Your Cylinder's Good Friend... *Ledeen* valves

HAND OPERATED 4-WAY VALVE

Three models: Completely Manual—Spring Return to Neutral—Spring Return to Reverse. Flow cycles to handle most requirements.

FOOT OPERATED 4-WAY VALVE

Same as Hand Operated Valve, except foot operation replaces hand. Leaves hands free for other work.

POWER OPERATED 4-WAY VALVE

For remote control, safety or automatic equipment. Suitable for solenoid, cam, finger, toe or hand operation.

Ledeen valves are built in sizes from ⅛" to 1¼" standard pipe tap—to operate air and hydraulic cylinders and motors, single and double acting.

Write for Bulletin 1000

Ledeen Mfg. Co.
1602 San Pedro
Los Angeles 15, Calif.

VALVES • CYLINDERS
AIR-HYDRAULIC
PUMPS & BOOSTERS
VALVE ACTUATORS
AIR HOISTS

If you write maker identify as IEN - 6430

WHY USE THESE EthoLoc* CABLE CLIPS?

1. Made of tough, durable Ethyl Cellulose plastic—no danger of shorts or grounds
2. Flexible and easy to apply—no sharp edges
3. Light in weight
4. Low in cost

15% reduction in prices on many popular sizes. We thank our customers for large volume that made price reductions possible.

Write for sample and full information

WECKESSER COMPANY

ALL NYLON CABLE CLIPS

5261 N. Avondale Ave. • Chicago 30, Ill. • Dept. L

If you write maker identify as IEN - 6431

Moving or Storing is Rapid, Convenient and Inexpensive with

IRONBOUND SEMI-LIVE SKID PLATFORMS

Ruggedly built with capacities up to 2500 lbs. These units are quickly made mobile with the use of low cost lift jacks . . . One of the methods that Ironbound engineers use to increase production and conserve space at low cost.

SEMI-LIVE SKID WITH BOX TOP

. . . permanently attached or removable. Also available with many other superstructures to "Short-Haul" your products thru production or into storage. Useful in hundreds of spots in every plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

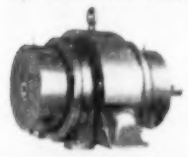
If you write maker identify as IEN - 6432

They Shed Splashes
Like Water Off a Duck's Back

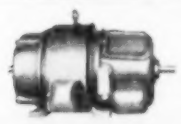
Century

SPLASH PROOF MOTORS

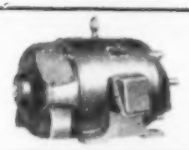
Protect your production from motor failure caused by squirted, spilled or splashing liquids. There are many types and sizes of Century motors now available in Splash Proof frames:



1 to 400 HP Squirrel Cage, Induction 3 Phase



2 to 400 HP Wound Rotor, Induction 3 Phase



1 to 7½ HP Repulsion Start Induction, Brush Lifting, Single Phase

1 to 20 HP Capacitator Start Induction Single Phase (Capacitator mounted separately on 7½ HP and larger)

The complete Century line ranges from ⅛ to 400 horsepower, A.C., D.C., Drip Proof, Splash Proof, Dust Proof or Explosion Proof. For complete information, contact your nearby Century Office or authorized Century Distributor.

Century C MOTORS

788

CENTURY ELECTRIC COMPANY
1806 Pine Street
St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

If you write maker identify as IEN - 6434

LUBRICATING . . Pressure fitting checks reverse action at three points

Source: ALEMITE DIVISION
1828 Diversey Parkway, Chicago 14, Ill.

Holds line fluids

Triple Check is a new design of lubricant fitting in which two balls are included in addition to the standard check closure at the outer end. The design is suited particularly for lubricated plug valves to replace screw feed for the lubricant and to permit lubricating when the valve is handling line pressure. The fitting is employed with a booster type hand gun which the company supplies. It builds feed pressure to 15,000 pounds.

If you write maker identify as IEN - 6435

INSULATING . . Fiberglas lining for air conditioning duct interior

Source: OWENS-CORNING FIBERGLAS CORP.
100 Nicholas Bldg., Toledo 10, Ohio

Rated "incombustible"

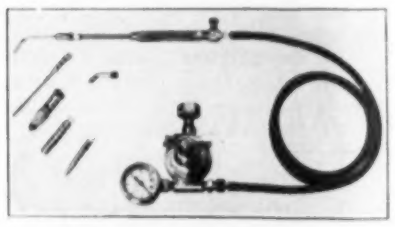
Duct Liner is a new flexible sheet material made of fine fibers of glass. It is intended to line the interior of air conditioning ducts to absorb sound and to set up a barrier against the flow of heat. A light fire-safe coating of neoprene covers one side. The material is available in ½ and 1-in. thicknesses and in 48-in. width. The ½-in. material is supplied in 200-ft. rolls, the 1-in. material in 100-ft. rolls. The liner is suited for temperatures to 450 deg. F.

The sheet material is cut to match the size of an unformed steel sheet. It is adhered to the flat sheet and then the two are formed in suitable equipment to produce the completed duct. It also can be installed in ducts, after they have been formed, after spreading adhesive over the interior duct surface to hold the material in place.

If you write maker identify as IEN - 6436

SOLDERING . . Acetylene torch equipped with interchangeable tips

Source: TORIT MFG. CO.
286 Walnut St., St. Paul 2, Minn.



$32.50 complete

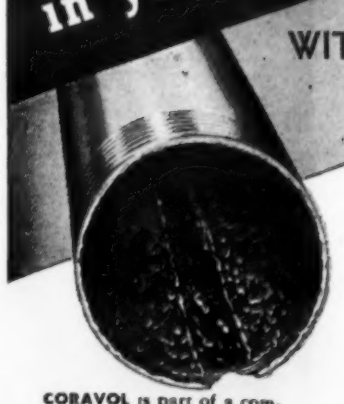
Outfit 123 is a new assembly of acetylene torch, interchangeable tips, connecting hose and gage equipped regulator to apply on a Presto-B tank. The torch develops a temperature of 2,800 deg. F. It is suited for light heating, brazing and soldering operations, can be turned off and on safely by operating a built-in valve on the handle. The pressure regulator and welding type hose minimize any chance of breaks in the hose or broken hose connections.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6437

Stop CORROSION in your Steam System

WITH CORAVOL BOILER



When fed to your steam system, **CORAVOL**: (1) *prevents* corrosion in steam and condensate lines, (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

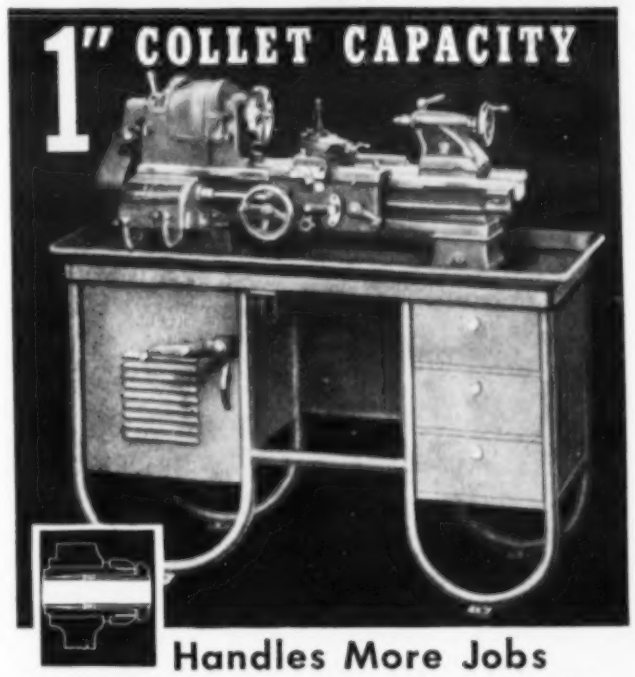
CORAVOL is part of a complete technical service which provides special chemical formulas for: Boiler Feed Water . . . Foam Prevention . . . Hot Water Supply . . . Refrigerating Brine . . . Cooling and Condenser Water . . . Rapid Scale Removal . . . Coagulation . . . Algae Control.

Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

Western Chemical Co. is owner of U. S. Patent No. 2053024 covering the use of volatile amines in steam systems.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

If you write maker identify as IEN - 6438



Handles More Jobs

1" collet and 1⅜" spindle bore give this lathe the capacity for a greater variety of jobs. Its 48 power feeds for turning, 48 for facing and 48 for threading give you everything you need for any job. And its accuracy and rugged construction assure precision work through years of dependable service. *Write for catalog.*

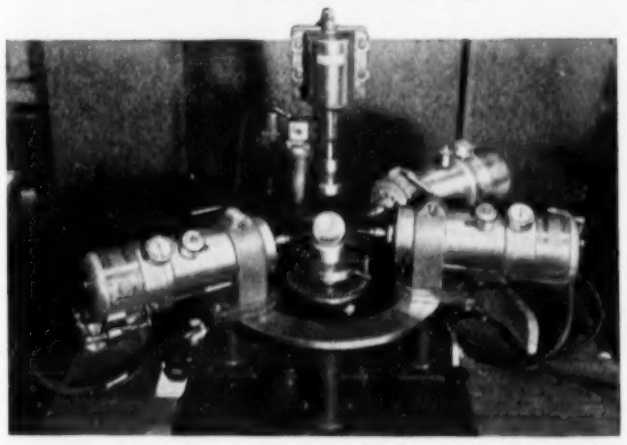
South Bend 10" x 3', 1" Collet Capacity, Quick Change Gear Precision Bench Lathe (illustrated above).

Building Better Tools Since 1906
SOUTH BEND LATHE SOUTH BEND 22, INDIANA

If you write maker identify as IEN - 6439

DUMORE® DRILL HEADS

increase production 322% for toy manufacturer



. . . save $13.74 per thousand plastic balls drilled

Three Dumore Automatic Drill Heads mounted on a special fixture cut this manufacturer's production cost from $18.00 to $4.26 per thousand balls drilled.

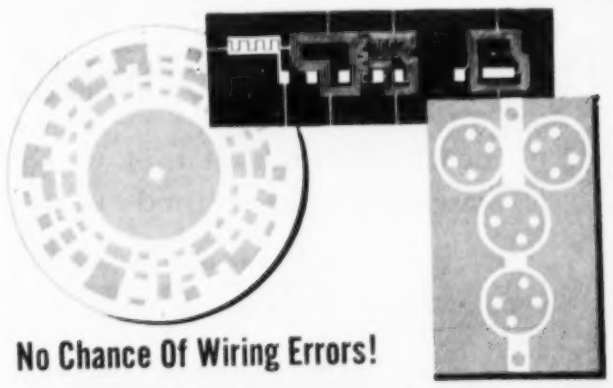
Based on yearly output of 500,000 balls, this meant savings more than four times the original $1,600 cost of the Drill Heads and fixture. What's more, the Dumores' flexibility also helped reduce shelf inventory.

As a company spokesman put it, "Low initial cost plus flexibility and ease of operation make the DUMORE a 'natural' for multiple drilling operations."

Dumore success stories like this are the rule, not the exception. That's why the demand for Dumore Tools is booming. To get details on the few Dumore franchises still available write, wire or phone today.

THE DUMORE COMPANY
1319 Seventeenth Street • Racine, Wisconsin

If you write maker identify as IEN - 6440



No Chance Of Wiring Errors!

Print your product's electrical circuit on SYNTHANE copper-clad laminated plastic and you eliminate expensive wiring and wiring errors. Fast and relatively inexpensive, this process permits quick changes in circuits without retraining assembly workers. Easily punched, sawed, and drilled, copper-clad SYNTHANE also combines these properties: high strength, light weight, low inertia, corrosion-and-heat resistance, and high insulation. To learn more about the role of copper-clad SYNTHANE in electronics, mail this coupon today.

SYNTHANE

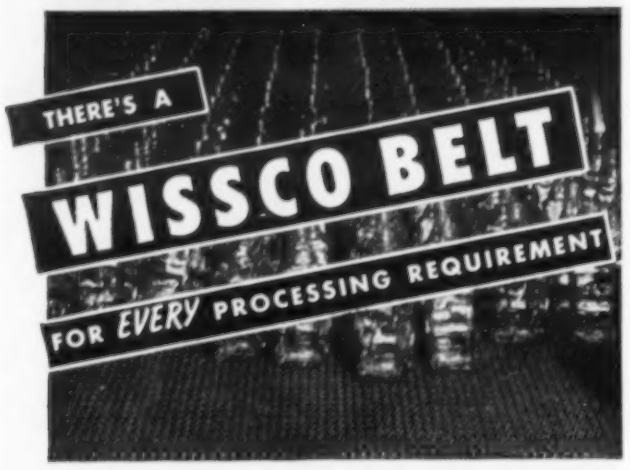
Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-MACERATED
MOLDED-LAMINATED
FABRICATED PARTS

SYNTHANE CORPORATION
S. River Road, Oaks, Pennsylvania

Gentlemen:
Please send me information on SYNTHANE laminated plastics' use in "printed" circuits.

Name _____
Address _____
City _____ Zone ____ State _____

If you write maker identify as IEN - 6441



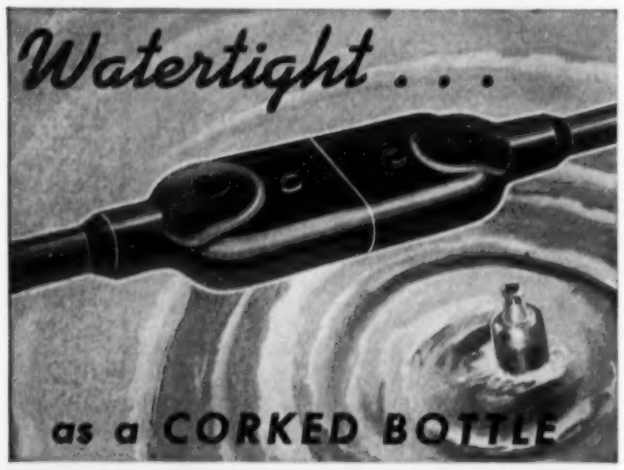
Custom-engineered to meet your specific requirements, Wissco Metal Processing Belts are furnished in standard or special mesh constructions... in conventional and spiral weaves... and with rod reinforcements for high-temperature service. Supplied in correct metal or special alloy for resistance to heat, abrasion and chemical action.

For specific information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION
CF&I

If you write maker identify as IEN - 6442



Moisture cannot penetrate the one-piece Neoprene body of a JOY electrical plug . . . when engaged, even its contacts are enclosed in a protective Neoprene housing through the *cork-like* action of JOY's famous water-seal. Permanently vulcanized to cable, it cannot crack . . . won't lose its shape . . . and requires no special considerations to insure a long life of useful service. A favorite since '26, JOY electrical connectors are now available in styles and sizes for nearly any portable electrical power transmission need. Why risk electrical misfits when the best actually costs less, in the long run? For more details ask for your free copy of Bulletin MC108 today!

ME 152.4

MORE THAN 100 YEARS OF ENGINEERING LEADERSHIP

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LTD., GALT, ONTARIO

If you write maker identify as IEN - 6443

Backstand belts cut costs!

Learn more about this money-saving method

The backstand-belt method of metal polishing is being used in more and more plants. Why? Because it saves time, cuts costs. Belts cut faster, cooler than set-up wheels – and cut down on the number of your operations. To learn more about this modern method of metal finishing, send for Armour's free booklet, "Backstand-Belt Polishing."

mail this coupon today

Please send booklet "Backstand-Belt Polishing."

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

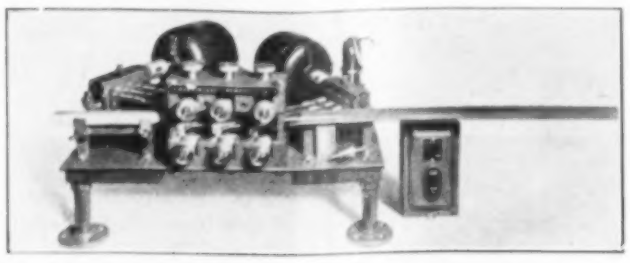
ARMOUR *Coated Abrasives*

Armour and Company • North Benton Road • Alliance, Ohio

If you write maker identify as IEN - 6444

STRAIGHTENING . . Roll type machine handles 1/16 to ¼ in. rod or tube

Source: MACKINTOSH-HEMPHILL CO.
899-903 Bingham St., Pittsburgh 3, Pa.



Adjustable for given work

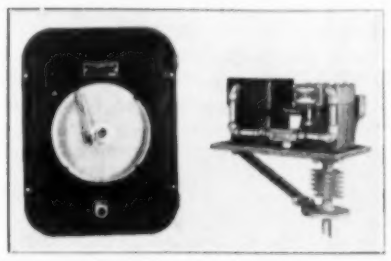
New design for the Model-AYZ roll type machine, previously described IEN-1222-52, employs two 3-phase ⅙-hp. motors operating at 3,600 rpm. on 220/440-volt ac. These motors replace previous single-phase units. The six ¾-in. rolls are driven by floating spindles, square instead of circular in section, to eliminate need for keys and to provide for lengthwise slip due to angularity of the rolls. The roll necks are mounted in needle rollers and ball thrust bearings.

The machine operates at 70 fpm. Overall dimensions are 22 by 20 by 8 in. above an integral table with adjustable legs.

If you write maker identify as IEN - 6445

TESTING . . Viscosity meter checks action in processing equipment

Source: NORCROSS CORP.
245 Newtonville Ave., Dept. N23, Newton 58, Mass.



Circular 12-inch chart

New assembly, with heat dissipating fins below its base, has been added to the Model M-5 meter, previously described IEN-11859-51. The new equipment is intended particularly for large resin and polymer processing reactors where heat as well as pressure and vacuum is a factor. Readings, made by the cam operated mechanism, are recorded in 3-min. intervals, can be employed to sound or indicate predetermined limits and to control.

The meter employs a piston that is raised in a tube by a motor driven cam and then allowed to drop by gravity. A sample of the liquid is drawn through orifices as the piston is raised and is expelled as it drops. Drop interval duration is the measure of liquid viscosity. Range is from 0.2 to 200,000 centipoises. The company will consult on application.

Identify as IEN - 6446

You can rent lighting equipment for temporary use in the Detroit area by making contact with Jack Frost, an electrical contractor there. He has assembled a collection of engine driven generators, incandescent spot lights, portable carbon arc lights. The generators are mounted on four-wheel trailers ready to go wherever you want to take them.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6447

FREE...

FOR... DESIGNERS
METHODS ENGINEERS
PROCESS ENGINEERS
PRODUCT ENGINEERS
MECHANICAL ENGINEERS
RESEARCH ENGINEERS
SUPERINTENDENTS
PURCHASING AGENTS

SEND FOR THESE HELPFUL BULLETINS TODAY

SERVICES BULLETIN NO. 161 describes the facilities that make Federal a *one-stop* stamping service. Specifications cover special die stamped wrenches, nameplates, and quality short run stampings from any stampable material.

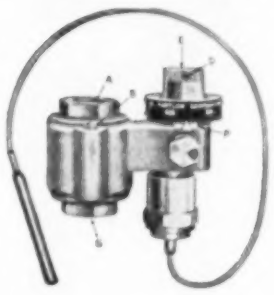
COSTS BULLETIN NO. 101 shows how Federal's special dies give the accuracy, exact duplication, and tolerances of permanent dies *plus* saving as much as 80% on die costs.

Federal TOOL AND MANUFACTURING CO.
3612 ALABAMA AVE. (ST. LOUIS PARK)
MINNEAPOLIS, MINNESOTA
"QUALITY STAMPINGS IN SMALL QUANTITIES"

If you write maker identify as IEN - 6448

TEMPERATURE CONTROLLER

Automatically throttles gas supply to maintain desired temperature. Five ranges between 0 and 1000 deg. F. on supply pressures to one pound.



One feature of this No. 40 control is that its valve is moved only just enough to feed the gas needed by an oven, heater, melting furnace or soldering equipment to compensate for changes in heat demand as established through its temperature-sensitive bulb. There is no overshooting or undershooting around the control point which you set on its rotating dial.

One unit in our complete line of high as well as low-pressure gas controls, this No. 40 is made in four sizes for pipe lines of ⅜ to 1 inch, and five heat ranges, 0 to 150; 50 to 350; 100 to 450; 100 to 650 and 100 to 1000 deg. F. Standard equipment includes a 5-ft. steel temperature-sensitive, mercury actuated, flexible element. List prices range from $40 to $52 in uncalibrated and calibrated designs.

BULLETINS 206 AND 250 PROVIDE DETAILS, SHOW BULB CONSTRUCTION FOR SPECIAL INSTALLATIONS. BULLETIN 340 SHOWS COMPLETE LINE

THE PARTLOW CORPORATION
4 CAMPION ROAD NEW HARTFORD, N. Y.

If you write maker identify as IEN - 6449

ALL-PURPOSE SLINGS

with new Roebling Tapered Sleeve Splice . . . stronger . . . cost less!

NEW ROEBLING All-Purpose Slings with the Tapered Sleeve Splice are delivered ready for the job. The unique rolled loops and tapered sleeve attachments develop the full strength of the rope... cost less than ordinary tucked splices... save "splicing your own".

Made of Roebling "Blue Center" Steel Wire Rope, All-Purpose Slings are unsurpassed for toughness and dependability... flexible and easy to handle... come in all standard lengths and sizes. Send for full information and for the free "Sling Data Book." John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

A subsidiary of The Colorado Fuel and Iron Corporation

ROEBLING

If you write maker identify as IEN - 6450

The large illustration shows a high pressure air valve designed and developed to meet exacting specifications. This valve is entirely special, but in many instances we can adapt our standard parts to your special problem, thus saving you valuable designing costs.

A few of our other special designs are shown in the background.

CATALOG ON REQUEST

Write today for our completely illustrated catalog.

Anderson Brass Company
Rockford Products: SHUT-OFF COCKS · VALVES · TUBE FITTINGS
5300 TWELFTH STREET DETROIT 8, MICHIGAN

If you write maker identify as IEN - 6451

Exactly how much weight do you throw?

Ten inch ounces or 2000 ft. lbs.? Whatever it is, it pays to know when tightening nuts, bolts, screws, or studs. And with Apco Mossberg Torque Wrenches you can know . . . instantly and precisely!

Like no other torque wrench of comparable size or style, an Apco Wrench measures the exact final tension on precision fasteners with the slightest pressure on the handle. Your dial readings are instantaneous and unerringly accurate . . . there are no springs or intricate parts to get out of order. Your work is made easier . . . large, quick-vision numerals and narrow heads simplify measurements in awkward places. Best of all, with Apco there's a wrench for every job in the shop — a complete range of sizes, from 280 inch grams to 2000 ft. pounds.

It pays to standardize with Apco Mossberg Torque Tools for Industry. Write today for complete details.

APCO MOSSBERG CO.

ATTLEBORO, MASS.

If you write maker identify as IEN - 6452

for jobs where you "can't take chances"...

SNAP-LOCK

again proved dependable for controlling repetitive cycles at 60 passes per minute

This Zagar acoustical wall tile drilling machine employs 5 Snap-Lock limit switches—three automatically controlling movements of the 96 spindle drill head and two actuating the hydraulic system operating the work table.

Zagar Tool Inc., Cleveland, O., manufactures drill heads, drilling and broaching machines. After 10 years experience with Namco Snap-Lock limit switches applied to a wide variety of large and small machine tools, Mr. Frank Zagar, General Manager states—

"for the fast, exacting and dependable controls in our machines, we can take no chances—we recommend Snap-Locks to customers all over the country."

This confidence is typical of expressions from machine tool builders, 90% of whom have adopted Snap-Locks as standard built-in equipment—some using more than 200 units on a single installation.

You can depend on Snap-Lock—Ask your Engineers to contact ours. Specifications Bulletin EM-51.

Heavy Duty Features of SNAP-LOCK Limit Switches

built BY machine tool builders FOR machine tool builders

- Separate safety walled enclosures for electrical and mechanical sides.
- Hardened steel parts, rugged, compact.
- Heavy insulation, oil and dust resistant case.
- Positive lock in "on" and "off" positions.
- Single pole normally open and closed, double break contact arrangements.
- Self wiping coin silver contacts.
- Wide variety of standard mountings and operating levers.

ELECTRICAL MANUFACTURING DIVISION

The NATIONAL ACME CO.

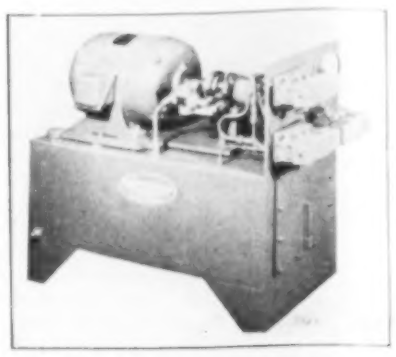
178 EAST 131 STREET, CLEVELAND 8, OHIO

Acme-Gridley Bar and Chucking Automatics: 1-4 6 and 8 Spindle • Hydraulic Thread Rolling Machines • Automatic Threading Dies and Taps • Limit, Motor Starter and Control Station Switches • Solenoids • Contract Manufacturing

If you write maker identify as IEN - 6454

DRIVE . . Hydraulic power unit, pump, motor, tank and controls

Source: J. N. FAUVER CO.
45 W. Hancock Ave., Detroit 1, Mich.



Meets JIC Standards

Gerotor pump and 5-hp. motor are assembled on a 3-point mounting plate on the 40-gal. tank in this new hydraulic power unit. Overall dimensions are 20 by 36 by 56 inches. The tank holds 40 gallons.

The pump rates 12 gpm. Assembly includes Parker flared type fittings, internal tank bracing to prevent vibration, solenoid operated valves and a Marsh pressure gage. A Vickers or other make of pump can be specified.

If you write maker identify as IEN - 6455

HEATING . . Electric element for immersion in alkaline solutions

Source: CLEVELAND PROCESS CO.
7014-18 Euclid Ave., Cleveland 3, Ohio

List is $27 to about $83

Series W is new design in the Glorod heating element line, previously described IEN-9949-52, for use in corrosive solutions. The new element is cylindrical in section to pass through a 2-in. threaded opening into which it screws just under its head. Length overall is 14 by 70 inches. Capacities are 1,000 to 10,000 watts.

Nickel alloy wire is embedded in fused quartz that is enclosed in a brass or stainless steel protective sheath. One end is closed. The other mounts a sealed vaporproof Underwriters' approved junction box. A thermostat can be specified.

If you write maker identify as IEN - 6456

PROTECTING . . Coated fabric glove provides a firm grip on wet objects

Source: EDMONT MFG. CO.
1226 Walnut St., Coshocton, Ohio

Curved finger pattern

Durox is a new plastic material employed to coat fabric work gloves in the new Grappler line. The glove is available in four styles including coated gauntlet, coated knitwrist, palm coated knitwrist and palm coated safety cuff. The coating looks and feels like leather. The glove is particularly suited for handling wet, oily tools and work pieces that are normally slippery.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6457

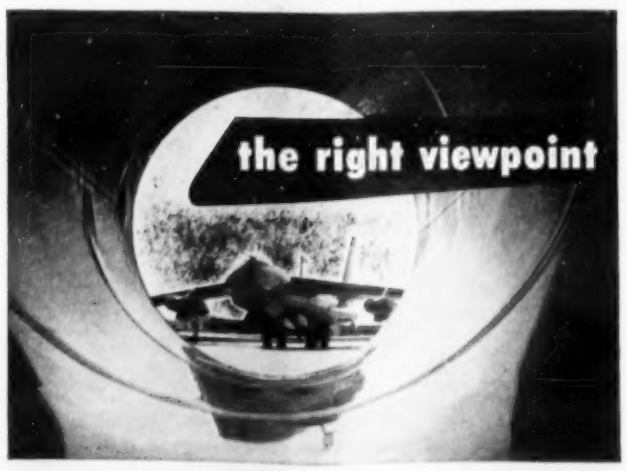


Photo Courtesy ATC

When you're thinking about aluminum or magnesium castings, you need the services of an organization with the right viewpoint.

We're referring, of course, to the right viewpoint toward the best possible use of these two light metals. . . ability to do the job; . . . service; . . . adequate facilities for production; . . . experience.

We here at Wellman like to think we have a combination of all these things . . . trained, interested personnel, three complete foundries and a modern pattern shop, almost a half century of experience in solving casting problems.

Why don't you try us and see how we look from your viewpoint?

- Well-Cast Aluminum and Magnesium Castings
- Well-Made wood and metal patterns

THE WELLMAN BRONZE & ALUMINUM CO.

DEPT. 9, 12800 SHAKER BLVD., CLEVELAND 20, OHIO

If you write maker identify as IEN - 6458

LOOK

FREE fan catalog for '53!

New models, new finishes have been added to the Emerson-Electric fan line—most complete fan line in America. See these fans for every commercial, industrial and institutional use. For free catalog write Dept. 709.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
FANS • MOTORS APPLIANCES

If you write maker identify as IEN - 6459

Here's how to SAVE TIME in SETTING-UP and KEEPING your MACHINES LEVEL

Fast Accurate Self-Aligning Machine Leveler

Empco JACK

Empco Jacks enable you to meet hurry-up demands for relocation of machinery by giving you the fastest, easiest, most accurate machine leveling ever known: you simply raise or tilt machine sufficiently to allow the Empco Jacks to be slipped under base. The number of jacks required depends on weight of machine and size of base. Once set on Empco Jacks, the entire operation of leveling and maintaining equipment level is quickly done. By applying a wrench to the "hex" head of adjusting screw, an adjustment is obtained either up or down until your level indicator reads "zero." Write for specifications and prices today.

Vibration absorbing mounting pads increase machinery life.

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2737 JEROME AVENUE • DETROIT 12, MICHIGAN

If you write maker identify as IEN - 6460

LOWERED INSURANCE COSTS BUY THIS SAFETY FLOOR PLATE

Reduced accident rates give you two benefits—increased production and lowered insurance costs. You can have these benefits by installing A.W. ALGRIP Abrasive Rolled Steel Floor Plate, because ALGRIP gives non-skid foot safety—even on steep inclines.

Alan Wood makes this tough, impact-and-heat-resistant floor plate by rolling abrasive "grinding wheel" grain into steel plate's upper portion. This gives the plate hundreds of tiny, hard-gripping safety brakes which —even when wet or oily—put an end to costly, morale-shattering accidents. And ALGRIP can't wear out—heavy use only exposes new abrasive particles.

Safe for vehicles and men alike, A.W. ALGRIP pays for itself with savings from safety. Write today for full information on how ALGRIP can make money for you. This coupon gets you Alan Wood's new booklet on ALGRIP.

A.W. ALGRIP *Abrasive Rolled Steel Floor Plate*

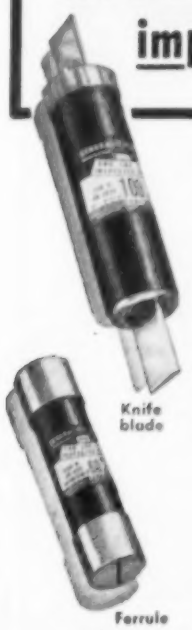
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

I want to learn more about ALGRIP savings from safety. Please send me your ALGRIP Booklet AL-5.

*Name*_____
*Company*_____
*Address*_____
*City*_____ *Zone*____ *State*____

If you write maker identify as **IEN - 6461**

NEW G-E RENEWABLE FUSE improved 4 ways



Check these important features:

1. Silver-plated electrical contact areas keep the new G-E fuse from overheating because of copper oxidation. 2. New link design gives accurate protection, plus freedom from blows caused by harmless momentary overloads. 3. Only two parts to remove when replacing links. 4. Solid brass fittings and thick fiber casing make the new G-E fuse exceptionally rugged.

Made in ferrule and knife-blade ratings—listed by Underwriters' Laboratories, Inc. It will pay you to get further information—see your G-E Construction Materials distributor, or, write to Section D84-642, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as **IEN - 6462**

Nugent pressure filter installed on turret lathe for filtering cutting compound.

GET THESE *BIG ADVANTAGES* WITH NUGENT CUTTING OIL and COOLANT FILTERS

1. **Oil and coolants are filtered 99.8% clean — can be used over and over again — oil savings almost 100%**
2. **Tool life is lengthened**
3. **Rejects reduced through greater accuracy and better finishes.**

Scientifically designed, Nugent cutting oil and coolant filters provide 20 times more filtering area than other filters of comparable size. Capacities range from ¼ to 320 GPM. Write for new catalog. For larger capacities, ask about Nugent gravity filters.

Wm. W. *Nugent* & Co., Inc.
418 N. Hermitage Ave. CHICAGO 22, ILLINOIS

NUGENT TRADE MARK Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . *Representatives in Principal Cities*

If you write maker identify as **IEN - 6463**

PRODUCT-PROVED WIRE

CONTINENTAL STEEL CORP. STEEL CONTINENTAL WIRE KOKOMO, IND.

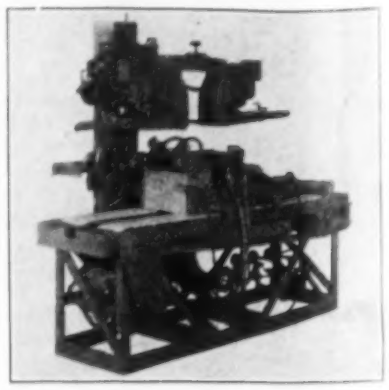
● The worth of Continental wire has been *proved* in the products of hundreds of leading manufacturers. Continental wire is uniform in temper, uniform in coating. Whether your need is for a rust-resistant wire that can stand up under difficult forming operations . . . or for a shaped wire to provide smarter-looking, longer-lasting trim . . . Continental wire can help you build a better, more profitable product. Write Continental at Kokomo.

CONTINENTAL STEEL CORPORATION

If you write maker identify as **IEN - 6464**

STAPLING . . Air operated machine closes and top staples filled cartons

Source: INTERNATIONAL STAPLE & MACHINE CO.
809 E. Herrin St., Herrin, Ill.



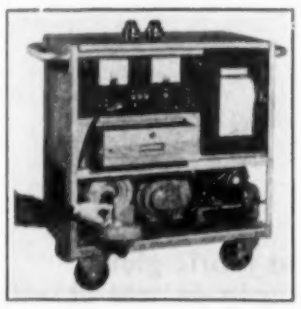
800 to 1,000 per hour

Operation is automatic for this new air operated stapling machine. It has been designed to assemble into a conveyor line to receive filled cartons. It centers each carton, closes the end flaps and then the side flaps and drives two staples at predetermined positions along the center slot of the carton. After the staples are driven, the anvils retract into the two stapling heads, the heads rise from the carton top, the centering device opens and the carton moves along the stapling machine conveyor belt to the main line. The machine can be adjusted to handle cartons measuring 11 to 17½ in. in length, 8 to 12 in. in width and 5 to 11 in. in height.

If you write maker identify as **IEN - 6465**

TESTING . . Radio activity unit signals dangerous concentration in air

Source: NUCLEAR MEASUREMENTS CORP.
2458-62 N. Arlington St., Indianapolis 18, Ind.



Protects workers

Positive blower draws air from the surrounding atmosphere through a cylinder of filter paper in a lead shielded detecting chamber in this new Model AM-2 Air Monitor. Radio active material is deposited on the filter paper and is detected by a Geiger-Mueller tube that mounts in the center of the cylinder. Pulses from the tube are indicated on a count rate meter and are traced on a strip chart recorder.

Three ranges provide for rates maximum at 2,000, 10,000 and 20,000 counts per minute. Change-over from one to the other is automatic and, when the high range is reached, an alarm bell is sounded and a red light starts to blink. In the center range an amber blinking light is actuated. The Geiger-Mueller tube is filled with halogen so it is insensitive to temperature changes. Power input is from a 110-volt 60-cycle circuit. The equipment is caster mounted.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Hundreds of product suggestions in the index on page one

If you write maker identify as **IEN - 6466**

Also standard metallic impact types . . . wide selection of piston diameter sizes.

LITERATURE ON REQUEST

THE CLEVELAND VIBRATOR COMPANY
2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as **IEN - 6467**

EASIEST WAY OUT OF A TIGHT SPOT

"YANKEE" *Offset Ratchet Screw Driver*

If there's an inch of clearance above or below the screw and room alongside to move your hand even half an inch, you can drive or draw that screw easily, quickly with a "Yankee" Offset Ratchet Screw Driver No. 3400. Only 3⅞" long, yet it has the power of a heavy, rigid 8" driver, will seat even a No. 14 screw. Two blades, ¼" and ⅜". Special alloy steel, hardened and tempered. Other models—No. 3800 for larger screws, No. 3423 for Phillips Screws; also No. 3600-5 Kit with handle and interchangeable adapters for hollow set and cap screws. All ratcheted to give fast, powerful action with the slightest swing of the arc. Sold by industrial distributors.

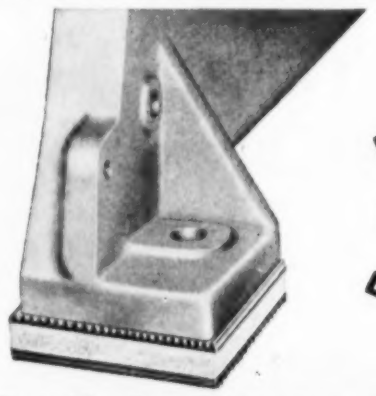
Write for the "Yankee" Tool Book

NORTH BROS. MFG. CO.
204 West Lehigh Avenue
Philadelphia 33, Pennsylvania
DIVISION OF STANLEY TOOLS

STANLEY
Reg. U.S. Pat. Off.

If you write maker identify as **IEN - 6468**

It's SIMPLE To Control VIBRATION and NOISE with Elasto-Rib...



NO BOLTING
NO CEMENTING
LOW COST

Elasto-Rib effectively stops transmission of vibration and noise by utilizing the elastic and damping properties of both cork and rubber.

It is fast and easy to install. For most machine applications, no bolts, lag screws or cement are required. Sheets 24" x 36" can be sawed or cut to size as needed.

New, illustrated booklet tells all about Elasto-Rib and how to install it. Ask for ER-701 and free sample.

THE KORFUND COMPANY, INC.

KORFUND VIBRATION CONTROL — SPRINGS — RUBBER — CORK

48-35 E. Thirty Second Place, Long Island City 1, N. Y.
In Canada: 510 Canal Bank, Ville St. Pierre, Montreal

If you write maker identify as **IEN - 6469**

BOOST PUMPS

Boost 100 PSI. air pressure to 10,000 PSI, fluid pressure for $173.25 (FOB Gardena, Calif.). Eight standard models for output fluid pressures of 1,000 to 30,000 PSI. Special models for lower or higher pressures.

Applicable wherever low volume output at high pressures is the requirement. For oil or water service. Complete power packages also available. Send for bulletins.

SPRAGUE
Engineering and Sales Corp.
1144 West 135th Street, Gardena, California

If you write maker identify as IEN - 6470

ENAMELSTRIP

STEEL · ALUMINUM · BRASS · PRE-FINISHED COLOR COIL

assures a perfect finish

before fabricating

You can easily cut production time and cost with Enamelstrip, the continuous-feed, pre-colored metal coil. Leading manufacturers of metal products are using it with outstanding results in a wide variety of items. Enamelstrip's exclusive, flexible finish withstands the stresses of drawing, bending and forming without cracking or peeling. Many companies have entirely eliminated their finishing departments! Any metal in any finish will be coated and slit to your own specifications.

Write TODAY for detailed color bulletin

THE COATED COIL CORPORATION
511 West 30th Street, New York 1 • LOngacre 5-3161

If you write maker identify as IEN - 6471

You gain UNIQUE ADVANTAGES with the Hapman

PIVOTED BUCKET CARRIER FOR WET OR DRY MATERIALS

This sample circuit carries aluminum oxide from a drier to storage tank.

MANY CIRCUIT LAYOUTS POSSIBLE—HANDLES FRAGILE CRYSTALS, LUMP OR POWDERED MATERIALS

One of *your* tough problems in materials handling may be happily solved by the *unique* patented features of this Hapman Carrier design.

Circuits of many types can be built . . . to carry fragile crystals, corrosives, abrasives and other "problem" materials . . . at speeds to 60′ per minute—100 tons per hour. Design permits *gentle* automatic top-loading—automatic unloading and unusually long life.

There's *much more* that may interest you—

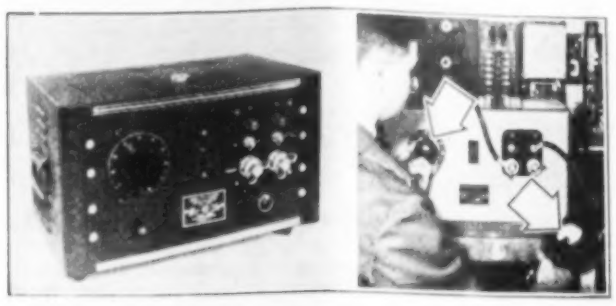
WRITE FOR PIVOTED BUCKET BULLETIN HB-IN653

Hapman CONVEYORS, INC.
DIVISION HAPMAN-DUTTON COMPANY
KALAMAZOO MICHIGAN

If you write maker identify as IEN - 6473

TESTING . . Trip loading instrument checks setting on breaker or relay

Source: MULTI-AMP CORP.
119-23 Cross St., Harrison, N. J.



Ask for Multi-Amp Booklet

Model 1010 with 1 kva. output rating, and Model 1005 rating 2.5 kva., are new portable current loading instruments to check performance and safe setting on current limiting devices such as circuit breakers, overload relays. The instrument supplies the required current to the overload device only. It is employed in connection with a current indicating instrument and a timer, supplied by the user or specified as auxiliary equipment.

The instrument provides adjustment for current output rating 0 to 500 amp. at 0 to 2 volts or 0 to 10 amp. at 0 to 100 volts with three intermediate ranges on the smaller instrument. Output on the larger one is 0 to 1,000 amp. at 0 to 2½ volts or 0 to 12½ amp. at 0 to 200 volts with six intermediate ranges. Input is maximum at 10 and 12 amp., the former on 110-volt 60-cycle ac., the latter on 220-volt 60-cycle ac.

A test is made by connecting current limiting device to the output terminals on the instrument and by adjusting the dial on the instrument to the required current value while observing the current indicating instrument and timer.

The results are then checked against the manufacturer's published time-current curves to find if the protective device is operating properly and safely. Output current is adjustable in stepless progression. List prices are $275 and $450. A built-in six range ammeter adds $138. A built-in electric stop timer with an electronic actuator adds $139 or $149 in two designs with graduations at 0.2 and 0.01 second.

If you write maker identify as IEN - 6474

HOIST . . Drum type electric, ¼ and ½ ton, 12 and 18 ft. lift

Source: HARNISCHFEGER CORP.
4402 W. National Ave., Milwaukee 46, Wis.

$200 and $220

Rope control, for one hand operation, is now available on the 500 and 1,000-lb. sizes in the Zip-Lift hoists, previously described IEN-11350-50. Other construction features of the original design have been retained such as the double brakes, oil bath lubrication, enclosed construction, grease packed motor bearings.

Hoisting rates are 25 and 13 fpm. Both sizes are available with 12 and 18-ft. lift. Illustrated specifications are contained in Bulletin H-29.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6475

BALLS

- **All Materials** including carbides; hard cast alloys; stainless, chrome, and high speed steels; ceramics; plastics; synthetic sapphire.
- **All Sizes - Standard and Special** from 1/32″ to 6″ or larger.
- **All Quantities, Small or Large** from 10 balls to millions.
- **High Precision** — to .000010″ on size and sphericity.
- **Engineering Service** at your disposal, upon request.

WRITE FOR quotation and descriptive bulletin.

INDUSTRIAL TECTONICS, Inc. ANN ARBOR 2, MICH.

ITI PRECISION BALLS
All Materials — All Sizes
In Large or Small Quantities

If you write maker identify as IEN - 6476

Set Your Sights for Savings!

JOB-ENGINEERED ILLINOIS GLOVES

Proven on the production lines!... tested in the laboratory, Illinois Gloves give greater protection, longer wear, better fit! There's an Illinois Glove designed for your job...or, if you have a special problem, we'll engineer a special glove to meet its requirements! Write today!

RECONDITIONING MEANS SAVINGS! Illinois Gloves are made strong, take reconditioning easily, come through stronger, good as new! Write about our own reconditioning process!

ILLINOIS GLOVES

Write For Catalog
Sales Office: 1401 Fairfax Trafficway Bldg. D, Kansas City, Kansas

ILLINOIS GLOVE CO. CHAMPAIGN, PANA, EFFINGHAM

If you write maker identify as IEN - 6477

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line ...provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

Send for illustrated descriptive bulletin and detailed information

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 6478

SAVE WIRE STRIPPING TIME... AT LEAST 90%!

Speedex AUTOMATIC WIRE STRIPPER

Fast . . . Single Squeeze Operation
Speedex strips both solid and stranded wire, sizes No. 10 to 22. "Delayed action return" prevents crushing. Interchangeable hardened steel blades. Ideal for shop or heavy production use!

MODEL NO. 766-1
NET PRICE $4.95
($8.25 List)
Other Automatic and Standard Models Available

SEE YOUR DISTRIBUTOR OR WRITE FOR LITERATURE AND INFORMATION

WOOD SPECIALTY Manufacturing Co.
DIVISION OF GENERAL CEMENT MFG. CO.
909 Taylor Avenue • Rockford, Illinois

If you write maker identify as **IEN - 6479**

FAFNIR Ball Bearing *Power Transmission Units*

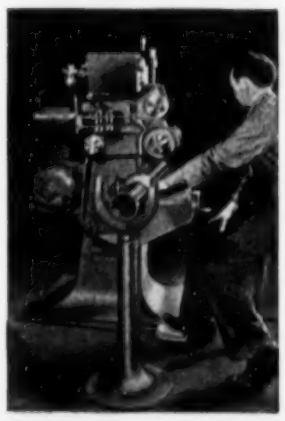
THE FAFNIR BEARING COMPANY
NEW BRITAIN, CONN.

FAFNIR BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

If you write maker identify as **IEN - 6480**

STEEN PIPE AND TUBE CUT-OFF MACHINES

For faster Cutting...



If you cut pipes and tubes . . . in small or large quantities . . . you can cut faster —easier—with a Steen Cut-Off Machine. Available in hand and automatic air-operated models for pipes and tubes up to 12" diam. *Also, Manufacturers of Cut-Off Wheels . . . Chaser and Wheel Grinders.*

Request Circulars Today

Continental MACHINE CO.
SINCE 1919
1952 N. MAUD AVE. • CHICAGO 14, ILL.

If you write maker identify as **IEN - 6481**

HOT OFF THE PRESS

1953 EDITION

Mall

PNEUMATIC TOOL CATALOG

Yours free—the new, info-packed MALL catalog showing the very latest pneumatic tools available. It's a MUST for your reference file. Send for it today and get all the facts about the world-famous MALL line of completely modern pneumatic production tools . . . a size and style for every need.

RUSH me a free copy of the 1953 MALL Pneumatic Tool catalog.

*Name*_____

*Firm*_____

*Address*_____

MU-23

Get Your FREE COPY NOW!

MALL TOOL COMPANY
7782 S. Chicago Ave.
Chicago 19, Illinois

If you write maker identify as **IEN - 6482**

CONNECTOR . . Push grip splice pilots electric cable into position

Source: RELIABLE ELECTRIC CO.
3143-47 Carroll Ave., Chicago 12, Ill.

Straightline Series 55

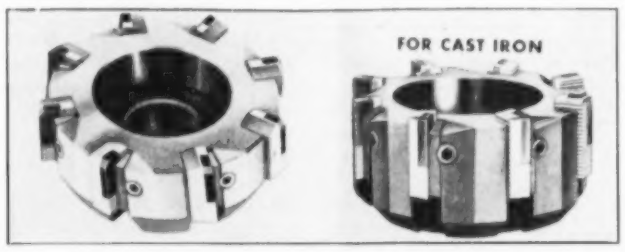
Pilot cups installed at the time of manufacture of this new splice, in each of its ends, receive electric cable ends when they are entered. They refuse cable strands that are out of place and do not permit entry of the cable until they cover all of the strands. Then they pilot the cables into place as they are pushed to the center stop in the splice. At this point the cable ends are firmly gripped and the connection is complete. The unit prevents entrance of gritty materials.

Working parts and surfaces are factory coated with a corrosion inhibitor. The splice is made of copper and copper alloys for copper conductors. It is aluminum for aluminum conductors. Sizes range from 1 to 4/0 for solid conductors, from No. 2 to 4/0 in seven or nine-strand conductors, from No. 3 to 1/0 for three-strand conductors. A standard package of the new cable splice contains 25 units.

If you write maker identify as **IEN - 6483**

MILLING . . Carbide tipped cutters are inserted in shell end mill body

Source: SUPER TOOL CO.
21652 Hoover Road, Detroit 13, Mich.



Ask for carbide mill bulletin

Steel blades, with carbide tips and serrated backs, are secured by load spreading wedges in replaceable assembly in this new shell end mill. It is available in two types for steel and for cast iron and non-ferrous metals. Type DBSS, for steel, is stocked in 4, 5, 6 and 8-in. diameters. Type DBS, for cast iron and non-ferrous metals, ranges from 3 to 8 inches. Replaceable blades, in various types of carbide, are in stock.

Identify as **IEN - 6484**

Electronic components have become a surprisingly big field for the use of Kester Solder Company's Solderforms. The company has designed and is making hundreds of the little shaped units in desired lead-tin alloys, with flux or plain. Rings, discs, pellets, washers, coils are included. Special metal alloys can be supplied as in soldering germanium diodes. It may be a good idea to let the Kester engineers look over your present soldering practices.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6485**

If you write maker identify as **IEN - 6486**

DARNELL CASTERS

ALWAYS SWIVEL AND ROLL

A SAVING AT EVERY TURN

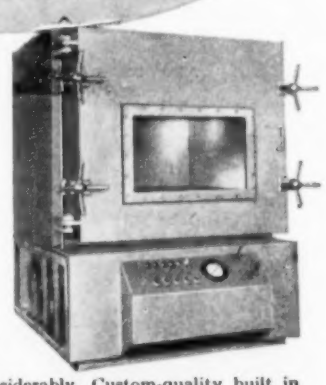
The more than 4000 types of Darnell Casters and Wheels makes it easy for you to specify the exact model for your needs, that meets floor, load and materials handling requirements. Or, Darnell's wide experience in "custom-tailoring" casters for special equipment is at your disposal.

Write for Free Darnell Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

If you write maker identify as **IEN - 6487**

New ALTITUDE SIMULATION CHAMBER



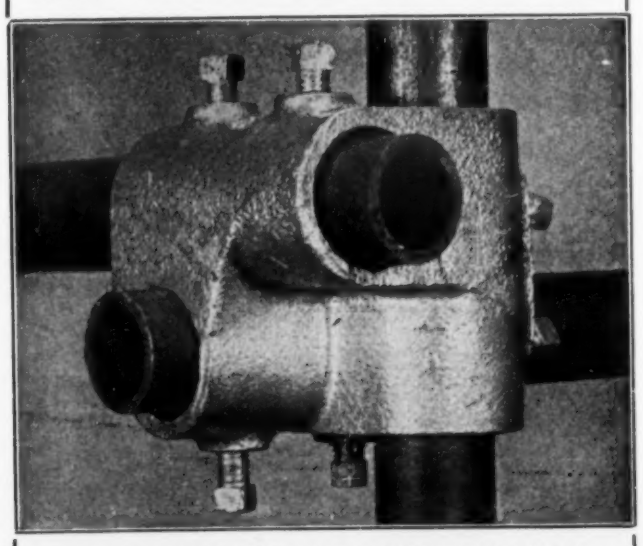
- Altitude Range to 120,000 feet.
- Temperature Range from 300°F. to —140°F.
- Micrometer Temperature Adjustments hold ±2°F.
- Compact Design . . . Requires less Floor Space
- Humidity Cycle available

Providing extreme flexibility in temperature and vacuum ranges, M & M Altitude Simulation Chambers give you precise control and easier, simpler operation that will reduce test costs considerably. Custom-quality built in every detail, M & M Chambers are designed to meet Government altitude simulation test standards. Available with many optional features to speed testing, such as Program Heating, Cooling, and Humidity Cycles, Automatic Recorder for controlling and integrating temperature, humidity and altitude. Write for details on Altitude SIMULATION Chambers as well as M & M Temperature Test equipment.

MURPHY & MILLER, Inc.
1324 South Michigan Avenue • Chicago 5, Illinois

If you write maker identify as **IEN - 6488**

MAKE YOUR OWN SCAFFOLDS WITH PIPE



MAINTENANCE AND CONSTRUCTION MEN ARE BUILDING

Safe, durable, adjustable, rolling and frame scaffolds for ALL jobs.
Material racks, pallet racks, bench frames and portable bleachers are also erected with:

AMIDON FITTINGS
and standard pipe • pictures available

AMIDON ENGINEERING CO., ELYRIA 14, OHIO

If you write maker identify as IEN - 6489

NOW... *Correct Taper*

—FOR MAXIMUM GRIP
—FOR EASY REMOVAL
IN

INTERCHANGEABLE TAPERED BUSHINGS AND SPROCKETS

BOSTON Gear

SHOLD-A-GRIP

Correct Taper

—FOR STRONGER, SLIP-PROOF GRIP
—FOR EASY REMOVAL Provides maximum holding power, even on worn shafts. Permits easy disassembly.

Broader Size Range

FIT SHAFTS ½" to 2½" BY 16THS
Any commonly used sprocket, ½" to 2¼" pitch can be interchanged on an extended range of shaft sizes.

FOR COMPLETE INFORMATION, ask your BOSTON Gear Distributor, or write: Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

SEE YOUR BOSTON Gear DISTRIBUTOR

If you write maker identify as IEN - 6490

CALCULAGRAPH

figures elapsed time accurately

Reliable job time records are essential for compiling correct cost data, estimating reorders and checking on production efficiency. One sure way to secure accurate to the minute, dependable time costs is to use Calculagraph automatically-figured elapsed time records. Calculagraph gives you total elapsed time, starting and finishing time and date on a permanent, printed reference card. Eliminate losses due to inaccurate job time calculations by using Calculagraph to time your operations.

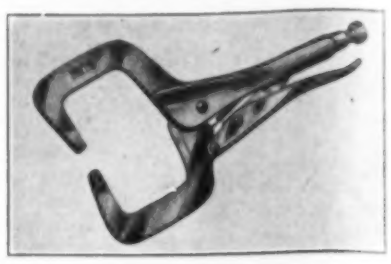
Write for full information today, to Dept. A.

CALCULAGRAPH COMPANY
SUSSEX STREET, HARRISON, NEW JERSEY

If you write maker identify as IEN - 6492

CLAMP . . Plier type toggle unit for work positioning and holding

Source: PETERSEN MFG. CO.
453 Petersen St., DeWitt, Nebr.



A Vise-Grip tool

New assembly, to present C-type clamping fingers, has been added to the company's toggle clamp, previously described IEN-9-48. The unit employs a toggle in the handle assembly. It can be adjusted by turning a screw at one outer end. When the toggle is moved over center, by bringing the handles together, the jaws will maintain their hold. List price is $2.95.

If you write maker identify as IEN - 6493

PLASTICS . . Synthetic materials to mold, fabricate, also finished forms

Source: AMERICAN HARD RUBBER CO.
93 Worth St., 10th Floor, New York 13, N. Y.

Technical data upon request

Three new materials, known as Ace Tempron, Ace Riviclor, and Dur-Ace, have been added to the company's lines for molding and fabricating and are used in its own lines of finished products.

Tempron is available as pipe and fittings, sheet, rod, tube and in molded and hand-fabricated parts. It is a hard rubber compound based on nitrite synthetic rubber. Its characteristics are rigidity, heat resistance and chemical resistance.

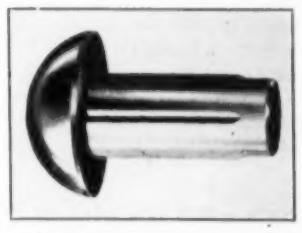
Riviclor is an unplasticized rigid polyvinyl chloride for use in manufacture of pipe, fittings, tank linings, valves, pump parts. It is resistant to chemical attack, has high impact strength and good fabricating characteristics.

Dur-Ace is thermoplastic, a multi-polymer material with good dimensional stability and resistance to attack by chemicals. It is recommended for formed and draw-molded parts and for corrosion resistant pipe, fittings and machined parts.

If you write maker identify as IEN - 6494

FASTENING . . Headed drive pin secures nameplates, covers, brackets

Source: DRIV-LOK PIN CO.
713-17 Chauncey St., Sycamore, Ill.



Can be removed

Parallel grooves, equally spaced around the shank of this new pin, are impressed on the shank to displace a predetermined amount of metal to each side of the cut to form raised flutes. These flutes are compressed to hold against the wall of a hole when the pin is driven into place. Round, flat and countersunk head designs are available, in lengths under the head, from ⅛ to ½ inch. Shank diameter is 0.067 to 0.250 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6495

Send for catalog No. 56

VLIER ENGINEERING, INC.
4552 BEVERLY BLVD., LOS ANGELES 4, CALIF.
Manufacturers of Toggle Pads, Spring Plungers, Spring Stops, Fixture Keys

---

If you write maker identify as IEN - 6496

STAINLESS STEEL BELLOWS ASSEMBLIES . . . to your specifications

● Check with Fulton Sylphon specialists on your stainless steel (or other metal) bellows assemblies needs. Custom-made to your specific requirements—saving you time, trouble and money. Used in many industries, to help solve design problems involving control of temperature and pressure—for thermostatic devices, pressure controls, expansion joints, as flexible connectors, etc. Write for illustrated, idea-filled Catalog LN-1450.

FULTON SYLPHON DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 1, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

If you write maker identify as IEN - 6497

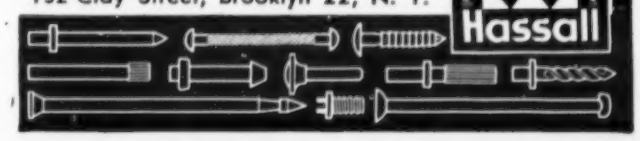
WRITE FOR FREE Hassall decimal-equivalent wall chart

In such popular demand (we've given away 50,000) — we've made it better. The new chart is far easier to read! In three colors to automatically signal decimal-equivalents of fractions. The special products which frame the chart are a constant reminder of a good source for cold-headed parts.

ESTABLISHED 1850

JOHN HASSALL, INC.
132 Clay Street, Brooklyn 22, N. Y.

Hassall



If you write maker identify as IEN - 6498

HEVI DUTY ELECTRIC COMPANY

"MULTIPLE UNIT" TEMPERING FURNACE

For Temperatures to 1250° F.

A high speed centrifugal fan located in the rear of the heating chamber supplies rapid and uniform heating. Shelves and baffle are easily removed.

Write for BULLETIN LAB-1049

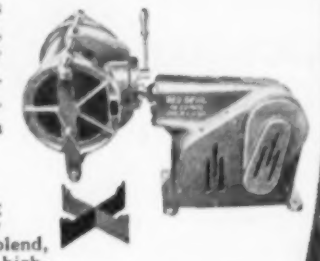
See Your Laboratory Supply Dealer

HEVI DUTY ELECTRIC COMPANY
HEAT TREATING FURNACES HEVI-DUTY ELECTRIC EXCLUSIVELY
DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS
MILWAUKEE 1, WISCONSIN

If you write maker identify as IEN - 6499

better paint job with Red Devil Paint Conditioner

Paint pepped up by Red Devil Paint Conditioners goes on more smoothly, and better protects your product. Patented 3-directional motion puts pigment in perfect suspension —quick!



NOT JUST PAINT

Manufacturers of everything from printers' ink to putty use these machines to mix, blend, and rejuvenate all kinds of high-viscosity and low-viscosity mixtures.

If you have hard-to-mix, or *hard-to-keep-mixed blends*, Red Devil can arrange to have test samples agitated at a nearby location.

Various models provide automatically-timed agitation for ¼ pint to 5 gal. cans. Attachments for round and square containers.

Red Devil Catalog No. 21M lists all Red Devil three-way agitators and Red Devil floor maintenance machines. Write Red Devil Tools, 129 Coit Street, Irvington, New Jersey.

Products of 1868 Red Devil Tools. 129 COIT ST. IRVINGTON 11, N. J. U. S. A.

If you write maker identify as IEN - 6500

HANSEN

QUICK-CONNECTIVE STEAM COUPLINGS

WORKING PRESSURES TO 350 POUNDS

Sectional View of High Pressure Steam Coupling Showing Smooth Unrestricted Bore.

• Slight movement of sleeve instantly connects or disconnects couplings. Two types available—Low Pressure (¼") for pressures up to 40 psi. ga. (saturated)—and High Pressure (¼" and ½" for pressures up to 350 psi. ga. saturated and ¾" for pressures to 250 psi. ga. saturated).

Easily repacked with formed graphite and asbestos packing. High Pressure Couplings designed for easy take-up while in service. Machined from solid brass bar stock.

Also general purpose one-way shut-off, and two-way shut-off couplings. Write for catalog.

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 6501

LUFKIN MITI-MITE Magnetic Tools

ATTACH INSTANTLY TO EITHER CURVED OR FLAT SURFACES

PORTABLE DEMAGNITIZER

Completely de-magnetizes by merely sliding over surface of the item. Lightweight — easily portable — small size for easy use in hard-to-reach places.

10 TOOLS • HUNDREDS OF SHOP USES.....

Handy-Lites give you light where you need it — light those hard-to-see places. 4x magnifier. Heavy duty indicator with or without surface gage shoe. Indicator holders take nearly any indicator without haphazard clamping.

BUY LUFKIN TAPES RULES • PRECISION TOOLS FROM YOUR DISTRIBUTOR

MAIL COUPON FOR FREE BOOK

LUFKIN RULE CO., Saginaw, Mich. Dept. IEN

RUSH ME YOUR FREE BOOKLET DESCRIBING LUFKIN MITI-MITE MAGNETIC PRODUCTS.

Name_____

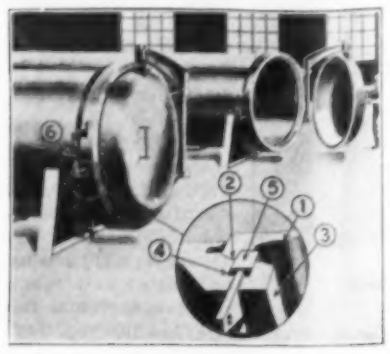
Street_____

City_____ State_____

If you write maker identify as IEN - 6502

PROCESSING . . Quick opening door for pressure vessels, ring controlled

Source: BLAW-KNOX CO. 2050 Farmers Bank Bldg., Pittsburgh 22, Pa.



No nuts to turn

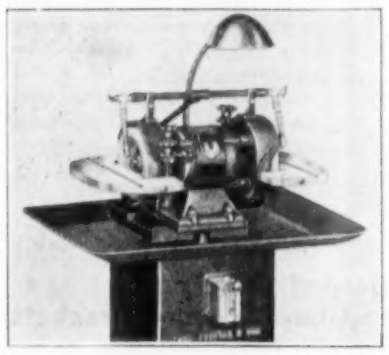
Time required to open and close a door on a pressure vessel, such as a vulcanizer, autoclave, impregnator, is reduced from about a half hour to a few seconds by application of this new hinged door and its locking ring. The door is available for duty ranging from vacuum to 300 lb. per sq. in. and to 400 deg. F. It is in specified sizes.

The door 1 seals against a bevel 2 in the frame after passing through a frame flange 3. Between this flange and the main frame is a groove 4 that surrounds the opening. A split ring 5 floats in this groove and bears against a wedge surface on the back of the door to hold it in sealed position. The ring is expanded to clear the door by operating a turnbuckle 6 or by applying pressure in a hydraulic cylinder that can be employed in place of the turnbuckle.

If you write maker identify as IEN - 6503

GRINDING . . Carbide tool machine with coolant pump for wet operation

Source: THOMAS PROSSER & SON 65 South St., New York 5, N. Y.



For general use

Model AW is new design of the company's previously developed Model-AA carbide tool grinding machine to provide for wet as well as dry operation. Its ½-hp. motor mounts two 6 or 7-in. wheels beside adjustable work tables. The motor is provided with reversing control for rotation in either direction. A separate motor drives a pump to draw coolant from a settling tank in the base and deliver it through two nozzles at the wheels. Adjustable spray guards are mounted at both wheels.

The machine assembles on a coolant pan on a floor pedestal. The motor can be single phase 110-volt ac. or three-phase for operation on 220/440-volt ac. List price is about $398.

Identify as IEN - 6504

Quart markings are impressed in the wall of a new ten-quart galvanized pail known as Mix-Pail. The markings help in measuring desired quantities in a mix. The maker is Wheeling Corrugating Company.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6505

SAFETY ALARM SETS

The Synchro-Start Alarm Sets are designed to give audible and visual alarm in case of any abnormal condition of the engine. Any number of individual signal lights indicate overheating, low oil pressure, low air pressure, etc., and can be furnished with automatic shut-down if alarm is not heeded.

Three switches are provided for testing, audible alarm cut-off, and a safety switch for emergency shut-down.

For further information write for Bulletin 407

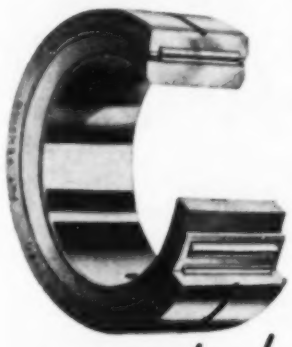
SYNCHRO-START PRODUCTS, INC.
8161 NORTH RIDGEWAY AVENUE, SKOKIE, ILLINOIS.

If you write maker identify as IEN - 6506

Look at This

PITCHLIGN Trade Mark

ROLLER BEARINGS



PITCHLIGN design does away with cocking and skewing by controlling the rollers at their pitch line. This roller control means longer life, far better overall performance. GET THE FACTS! Ask for Bulletin SF-668

Write Today!

RBC

ROLLER BEARING COMPANY OF AMERICA
SULLIVAN WAY • WEST TRENTON, N.J.

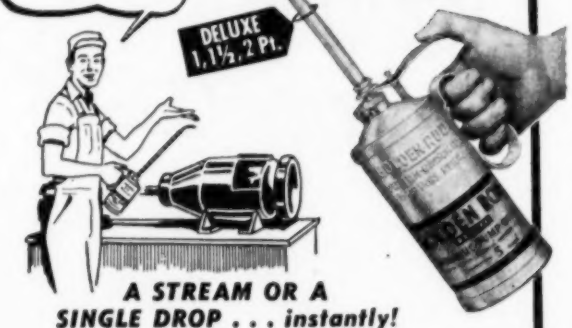
If you write maker identify as IEN - 6507

Replaceable Spout Tip

Golden Rod Hydraulic PUMP OILERS

THE BEST PUMP OILER I EVER USED. TRY IT!

DELUXE 1, 1½, 2 Pt.



A STREAM OR A SINGLE DROP . . . instantly!

- Volume determined by thumb-pressure.
- Exceptionally rugged, heavy welded steel.
- DELUXE—Capacity: 1, 1½, 2 Pt.
- Guaranteed for 5 Years!
- Thumb-pressure starts oil flow instantly.
- Up to 250 lbs. tip pressure.
- Replaceable Spout Tip.
- 3 spout types—straight, angle or flexible.

Order from your Mill Supply Jobber

DUTTON-LAINSON CO.
Dept. EN-2 HASTINGS, NEBR., U.S.A. Since 1886

If you write maker identify as IEN - 6508

CUSTOM COMPOUNDING

Take advantage of the long, varied experience of our compounders. Use their "know-how" to get the most out of rubber or elastomeric plastics. Our complete laboratories are at your disposal in solving your problems.

CUSTOM MOLDING

Our modern plant is long on experienced personnel and short on overhead costs. We specialize in the "hard to mold" rubber to metal items, light colors, and short production runs. Precision molding is our keynote.

Submit your problem or specification, today.

303C

COLONIAL RUBBER CO.
RAVENNA, OHIO

If you write maker identify as IEN - 6509

FREE CATALOG helps you select the right POWER HACK SAW ... for more EFFICIENT CUTTING

You get better, more economical cutting when you use the right hack saw for the right job. And this *free catalog* gives complete specifications on all 10 Keller Power Hack Saws. Tells special features, capacity, length of stroke, dimensions, motor H.P. and all other facts needed to select the proper saw for cutting everything from thin tubing to heavy 9"x9" steel bars.

Write for free catalog No. 1052 today!

Sales Service Machine Tool Co. SSMT
PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS
2365 UNIVERSITY AVENUE • ST. PAUL W4, MINNESOTA

If you write maker identify as IEN - 6510

ALEMITE OIL-MIST

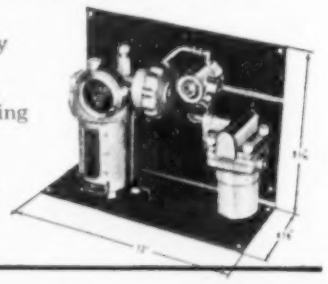
Saved $2400 first year

...extended bearing life from 20 weeks to one year and four months

Eastern Textile Mill Breaks Bottleneck, Cuts Downtime, Ups Production!

Bearing temperatures were running 200° on an important blower. Production losses totaled $1000 with each frequent bearing failure. After careful study of the problem, management installed an Alemite Oil-Mist unit costing little more than $100. Result: No bearing failures; downtime eliminated! $2400 *saved* to date!

Alemite Oil-Mist is a fully automatic system which atomizes oil into mist . . . distributes it through tubing to bearings . . . applies a constant uniform oil film to groups of bearings designed either for oil or grease lubrication.



delivers oil to bearings 3 ways

1. Oil-Mist as Such. For any type of anti-friction bearing—ball, roller or needle.

2. Oil in Spray Form. For open and enclosed gears and chains. Nozzle partially condenses mist so that it can be directed onto a concentrated area.

3. Oil-Mist Condensed. For plain bearings, slides, ways, vees, cams and rollers. In these applications, condensing fittings convert oil mist to liquid oil.

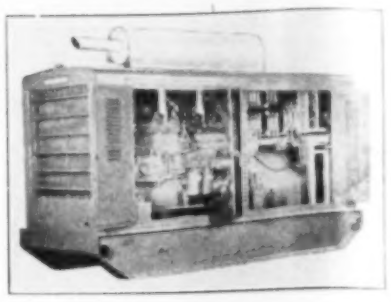
Get the facts NOW!

Let us send you the complete story on Oil-Mist. Specifications, models, typical applications, actual case histories. Get yours now. Write Alemite Division of Stewart-Warner, Dept. K-63, 1850 Diversey Parkway, Chicago 14, Illinois.

If you write maker identify as IEN - 6512

WELDING . . Engine driven generator to power seven arc weld circuits

Source: READY-POWER CO.
11229-33 Freud Ave., Detroit 14, Mich



For construction

A diesel engine and a 100-kw. generator are assembled together on a skid in this new heavy duty unit for arc welding operations in the field. There is sufficient power for simultaneous operation of seven arc weld circuits and, at the same time, for a 50-hp. air compressor motor plus a circuit to operate power tools and provide lighting. The new unit is known as Model RD24A12. The engine is an International Harvester diesel. A weatherproof housing completes the assembly.

If you write maker identify as IEN - 6513

GRINDING . . G-Bond vitrified wheels for tools, dies, production work

Source: NORTON CO.
36 New Bond St., Worcester 6, Mass.

Technical data upon request

G-Bond trade names new vitrified construction in the company's line of wheels and segments for precision and semi-precision grinding operations. The new bond can be used in making wheels of regular, 19, 32, 38, and 57 Alundum abrasive. It holds the abrasive grains until they have reached the limit of their useful cutting ability. Then it releases them to make room for new grains with fresh sharp cutting edges.

The action results in a sharp wheel surface capable of removing material quickly and easily for a considerable length of time. It provides free cool cutting that permits heavy feeds, conserves tool life and is capable of producing an excellent finish. Formed wheels hold their form and can be readily dressed with a diamond or a crushing roll.

If you write maker identify as IEN - 6514

WOOD WORKING . . Tang butt chisel, bevel edge blade and plastic handle

Source: GREENLEE TOOL CO.
2134-38 12th St., Rockford, Ill.

Carefully tempered

Carbon steel blade terminates in a tang that is secured in a green No. 2 Tenite plastic handle in this new No. 403 chisel. Blade length ranges from 2¼ to 2¾ inches. Overall length is 7⅝ to 8¾ inches. Nine chisel sizes are from ¼ to 2 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6515

For Precision Flatness and Finish... on Metals, Ceramics, Quartz and Plastics...

USE A CRANE LAPMASTER

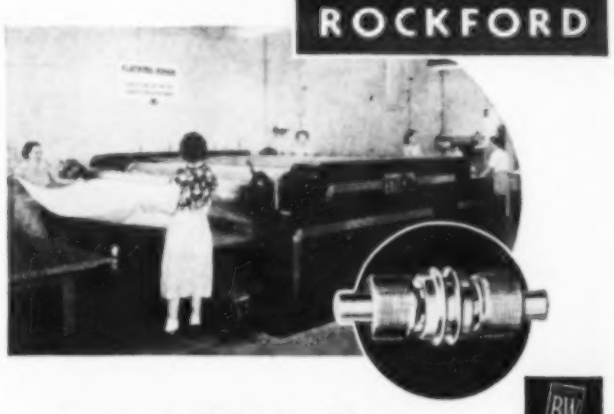
With a Lapmaster you can lap different parts in one cycle—lap a wide range of parts of different materials in short or moderate production—lap identical parts at tremendous production rates and maintain flatness to one light band (.0000116"), surface finish to 2 or 3 RMS. *Production lapping may be the solution to your problem. Get all the facts.*

Full facts on Lapmaster production lapping—Flatness interpretations available in two illustrated booklets. They are yours for the asking.

JOHN CRANE
CRANE PACKING COMPANY
LAPMASTER DIVISION
1815 CUYLER AVENUE • CHICAGO 13, ILLINOIS

If you write maker identify as IEN - 6516

CLUTCHES by ROCKFORD



Irons A Whole Sheet With A Single Pass

The American Laundry Machine Company's Super-Sylon Flatwork Ironer irons table and bed linens so gently that it will iron paper napkins. ROCKFORD CLUTCHES are specified for American multiple chest flat-work ironers. Let ROCKFORD clutch engineers help your product designers specify the precise power transmission control needed for your machines.

ROCKFORD CLUTCH DIVISION BORG-WARNER
303 Catherine Street, Rockford, Illinois, U. S. A.

If you write maker identify as IEN - 6517

YOU'RE SAFE WITH THE NEW SUPER-TOUGH WILLSON SAFETY HAT

THE NEW WILLSON SAFETY HAT is entirely new in design, material and method of manufacture . . . tough as metal and more resilient! Here are some other outstanding features of the new Willson Super-Tough* Safety Hat:

Streamlined Contour—deflects objects more effectively and provides a greater safety "pocket" inside.

New Suspension Design—adjustable "hammock" headband is suspended *inside* at 6 points. No exposed rivets or lacing—no holes through hat.

Comfortably Cool—space between headband and shell provides ample air circulation for wearer.

Moisture Resistant—practically 100% waterproof and resists many caustics and acids.

Passes all required tests with an extra margin of safety!

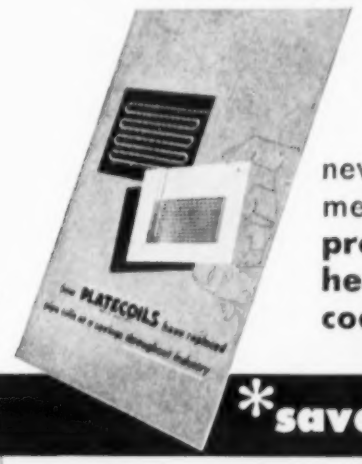
More than 300 safety products carry this famous trademark
WILLSON Established 1870

Write for your copy of the new bulletin describing the Willson Super-Tough* Safety Hat.

*trademark

WILLSON PRODUCTS, INC., 217 Washington Street, READING, PENNA.

If you write maker identify as IEN - 6518



new method of **process heating** and **cooling**

***saves 50%**

- * in initial cost
- * in heating and cooling time
- * in tank space
- * in maintenance labor

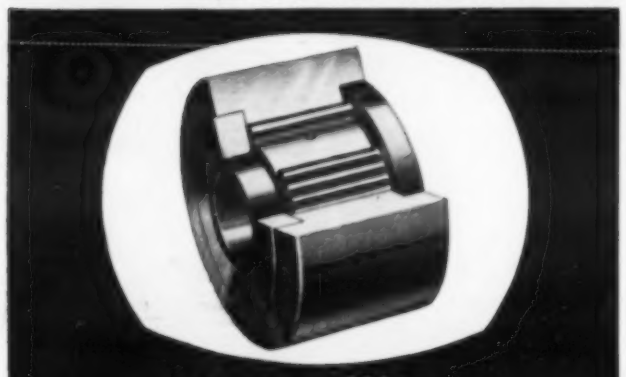
Each member of your buying committee should have this book which tells how Platecoils satisfactorily solve tank heating and cooling problems . . . and at the same time save time, money and manpower.

PLATECOIL REPLACES PIPE COILS

Write for your free copy of Bulletin P56 today!

KOLD-HOLD MANUFACTURING CO., LANSING, MICH.

If you write maker identify as IEN - 6519



versatility
for cam follower mounting provided with
MULTIROL® CYR bearings

With this series it is possible to utilize the full advantages of Multirol Cam Follower bearings in a yoke mounting. In the CYR bearing an inner race replaces the stud to further increase the adaptability of precision cam followers in automatic machinery requiring cam action or guide and support rollers.

Send for McGill Catalog No. 52

McGILL® precision bearings

McGILL MANUFACTURING CO., INC. 100 N. Lafayette St. Valparaiso, Indiana

If you write maker identify as IEN - 6520

DO YOU HAVE A HOPPER FEEDING PROBLEM? HERE'S THE ANSWER...

Effective all-directional vibration for moving stubborn materials in hoppers and bins. Instantly self-starting, no lubrication or maintenance needed. A variety of sizes available to meet all applications.

Rugged, effective vibration without damage to your bins and hoppers when you use the patented Peterson pneumatic VIBROLATOR.

WRITE for complete description, installation data and sizes —

MARTIN ENGINEERING COMPANY
KEWANEE 2, ILLINOIS

If you write maker identify as IEN - 6521

Get these facts!

ON QUICK, EASY PRODUCTION OF NYLON MAINTENANCE PARTS FROM POLYPENCO® NYLON ROD . . . STRIP . . . TUBING

These bulletins give full information on POLYPENCO nylon standard shapes. Cite examples of how to get *all* the advantages of nylon for maintenance parts by fabricating from standard shapes.

- Standard shapes (rod, strip, tubing)
- Formulation and characteristics
- Available sizes and length
- Recommended machining practice

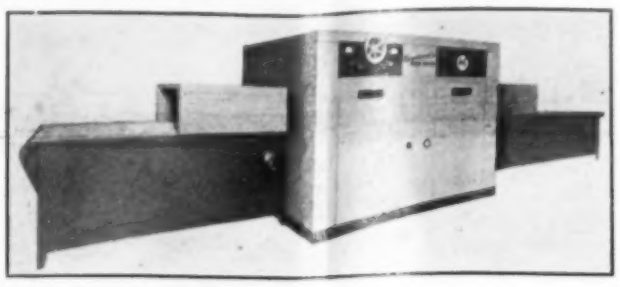
CLIP AND MAIL COUPON NOW!

Polymer Corporation of Penna., Reading, Penna.
Please send full technical and fabricating data ☐
rod, strip and tubing prices ☐
NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
(Please print)

If you write maker identify as IEN - 6522

DRYING . . High frequency equipment for foundry cores, to 900 lb. per hour

Source: ALLIS-CHALMERS MFG. CO.
909 S. 70th St., Milwaukee 14, Wis.



Delivers cores ready to use

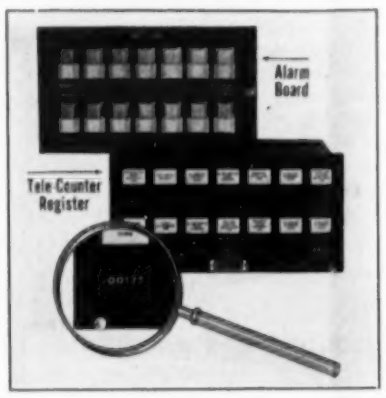
Two additions have been made to the company's Foundromatic core drying equipment, previously described IEN-7571-49. Ratings are 15 and 25 kw. for production capacities to 650 and 900 lb. of sand cores per hour based on 3 per cent moisture content. The generator section in the new design, previously a separate unit, has been built into the oven to assist in assembly and to improve the installation.

Overall dimensions in both new units are 20 ft. in length by 6½ ft. in width. Each provides a loading and unloading area of 9 square feet. Additional loading space can be provided to permit grouping core workers around the infeed end.

If you write maker identify as IEN - 6523

SIGNALING . . Electric annunciator indicates, counts abnormal conditions

Source: TIGERMAN ENGINEERING CO.
4330-34 N. Western Ave., Chicago 18, Ill.



Bulletin TCS

Model TC Tele-Counter is a new unit in the Tele-Alarm annunciator line to indicate abnormal conditions. It also counts their occurrence to keep track of frequency. Repeater window markings on the totalizer unit identifies each associated signal station on the main annunciator board. Any number of individual alarm points can be selected for totalizing or the entire installation can be equipped. The counter also can be applied on existing Tele-Alarm installations.

Identify as IEN - 6524

Want to see how bronze rod, tube and shapes are cast continuously by American Smelting and Refining Company? Ask for prints of the two part 35-mm. sound-slide film that has been prepared on the subject. Each part takes 15 minutes to show. There is no charge to interested groups. A lecturer will be provided also when this is possible.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6525

HIDDEN ASSET!

Customer confidence doesn't show on our ledgers, but we think it's just about the most important asset we've got.

Over the years we've made a lot of old customers out of new customers simply by giving each customer exactly the right kind of gear for his job. These customers continually express their confidence by letting us assume complete responsibility for their gear problems.

This situation pays dividends all around. It enables customers to save time and money, and it gives us considerable repeat business.

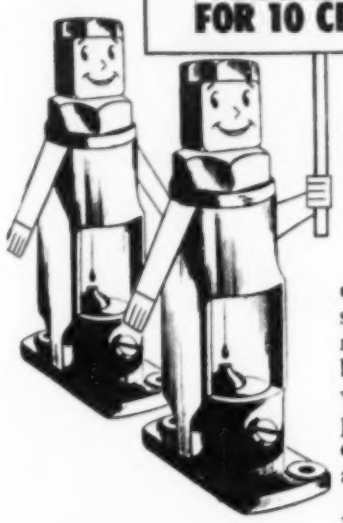
We'll enjoy your confidence, too, and you'll benefit in the bargain! THE EARLE GEAR & MACHINE COMPANY, 4707 Stenton Ave., Philadelphia 44, Pa.

It's good business to do business with EARLE!

EARLE GEARS

If you write maker identify as IEN - 6526

WE'LL WORK 24 HOURS PER DAY FOR 10 CENTS!



Without attention from highly-paid humans, Manzel Lubricators keep machinery running smoothly day after day. In labor alone they save thousands of dollars. In oil consumption they save as much as 90%. Costly breakdowns are prevented. Less than $.10 per day amortizes purchase price and covers all operating costs.

Manzel Automatic Force Feed Lubricators soon pay for themselves many times over. Write now for full information.

Manzel

242 BABCOCK STREET,
BUFFALO 10, NEW YORK

If you write maker identify as IEN - 6527

AJUSTRITE

TRADE MARK

AUTOMATIC ADJUSTABLE CHAIRS and STOOLS

RSC Models

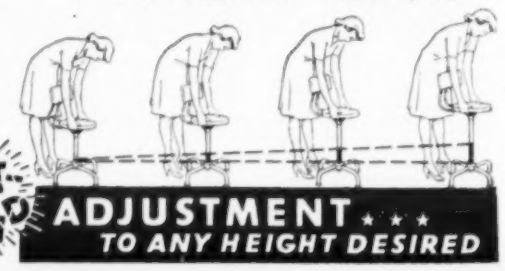
Size and style to fit every need.

Tops in factory, laboratory and school seating. Many leading industries have standardized on Ajustrite. Saves confusion among employees and eliminates maintenance. Has many advantages, high quality, no other like it. Try it in your shop *for 30 days.* Full information on request.

TSS Model

AJUSTO EQUIPMENT COMPANY
2146 Madison Ave. Toledo 2, Ohio

Adjusts
15" to 20"
18" to 26"
24" to 35"



SPLIT-SECOND ADJUSTMENT . . . TO ANY HEIGHT DESIRED

If you write maker identify as IEN - 6528

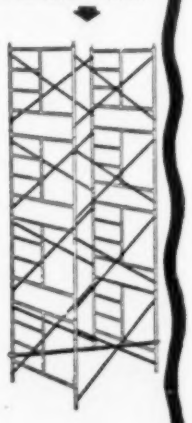
WORLD'S FASTEST, SAFEST SCAFFOLDING WACO

ROLLING TOWERS
Speedy and simple for maintenance work!

SECTIONAL SCAFFOLDING
Saves hours in scaffold erection time!

BIG WACO FEATURES!

Only WACO features the original, proven "SPEEDLOCK". Speed, safety and convenience in scaffold assembly.



- Built-in, floating coupling pins
- Built-in ladders
- Pivoted cross-braces
- Heavy duty rubber tire wheels
- Brake-type casters

Phone your local WACO distributor today for a free demonstration. Distributors in all principal U.S. and Canadian cities.

Write for free file folder

WILSON-ALBRECHT CO., INC.
DEPT. K, 3565 WOODDALE AVE.
MINNEAPOLIS 16, MINN.

If you write maker identify as **IEN - 6529**

MODERNIZE WITH TRIPLETT METERS

A SIZE, TYPE, AND STYLE FOR EVERY INSTALLATION

Your instrumentation is strictly modern in design and construction with Triplett Meters. You can have sizes 2" to 7" in a wide variety of case shapes and mounting arrangements, A.C., D.C., R.F., Rectifier or Dynamometer. Molded and metal cases, rear illumination, and other special features are available. For precision and economy virtually every meter part is made in Triplett plants under rigid humidity and dust control. Every meter represents the refinements gained in half a century of meter experience. Keep *your* panels up-to-the-minute with Triplett Meters—famous the world over for quality, accuracy, and dependability.

Triplett Electrical Instrument Co.
Bluffton, Ohio, U.S.A.

FOR THE MAN WHO TAKES PRIDE IN HIS WORK
Triplett
TRIPLETT ELECTRICAL INSTRUMENT CO. BLUFFTON, OHIO, U.S.A.

If you write maker identify as **IEN - 6530**

U.S. Rubber Multi-Flex Boots make equipment last longer

Note Multi-Flex Boot extended from ram plunger that lifts 12 cu. ft. bucket. The ram plunger activates the bucket to any position required for loading or unloading stone, cinders, sand.

The hydraulic actuating pistons on many types of equipment such as the tractor-shovel (above) and lift trucks are protected by Multj-Flex® Boots. Made without molds by a versatile process developed by United States Rubber Company, they can do many jobs conventional boots cannot do. Multi-Flex Boots prevent scoring of pistons and damage to packing by stones, sand, cinders and other materials. They also protect against rust and corrosion.

The versatility of rubber seems to have no limits when in the hands of "U.S." technicians. They may be able to make your product last longer, or operate more economically. Write to address below.

Here the Multi-Flex Boot is compressed. The drive wheels throw quantities of stones against the boot at high velocity.

"U.S." Research perfects it
"U.S." Production builds it
U.S. Industry depends on it

U.S. RUBBER
SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe & Fittings • Molded & Extruded Rubber & Plastic Products • Protective Linings & Coatings • Grinding Wheels • Packings Tapes • Conductive Rubber • Adhesives • Roll Coverings • Mats & Matting

If you write maker identify as **IEN - 6532**

BUILDING . . Prefabricated steel, to 60 ft. span, 12 to 20 ft. height

Source: BROOKVILLE MFG. CO.
P. O. Box A-67, Brookville, Pa.

For your walls

New design of the Brookville insulated structure permits supplying the roof as a complete packaged unit, independent of the walls. As a result the roof alone can be employed on various types of construction.

The roof assembly includes trusses, purlins, struts, bracing rods, insulation, exterior sheets, fastenings. The trusses are on 16-in. centers. The rigid insulation measures ½ in. in thickness. Sizes include spans measuring 40, 48 and 60 feet. The new roof represents further development of the complete building, previously described IEN-5685-52.

If you write maker identify as **IEN - 6533**

EXTINGUISHING . . Fire blanket made of plastic coated glass cloth

Source: B. F. GOODRICH CHEMICAL CO.
322-26 Rose Bldg., Cleveland 15, Ohio

Also will stop flying sparks

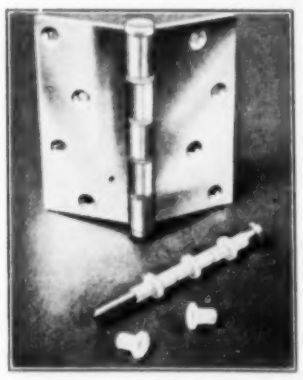
Dimensions are 76 by 60 in. and weight is 2½ lb. for a new vinyl plastic coated glass cloth fire blanket known as Stasafe. The blanket requires no covering and can be hung up in accessible position indoors or outside. It is resistant to attack by acids, alkalis, most solvents. It remains flexible in low temperatures and will not support combustion.

The words "Fire Blanket" are printed on it in bright red. It can be taken down quickly to wrap around an individual whose clothing is burning or to cover a machine enveloped in flames. It acts to cut off the oxygen and smother the fire.

If you write maker identify as **IEN - 6534**

HINGE . . Butt design for a door rides on nylon bushings, no lubricant

Source: H. S. GETTY & CO.
3346-50 N. 10th St., Philadelphia 40, Pa.



Will not corrode

Smooth movement and silent door swing are provided by this new butt hinge. It is made of extruded bronze. The pin is stainless steel. The interior of the barrel is bushed with nylon, the flange on the bushings acting as a load bearing. The bushings cannot fall out when the hinge leaves are separated. Application can be made indoors or outside.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6535**

Combat HEAT FATIGUE with

- **Salt lost through perspiration causes fatigue and heat exhaustion. Vigor and vitality can be increased—fatigue and heat prostration can be eliminated by taking PEP-UP Impregnated Salt Tablets.**
- **Meets Government Specification No. SS-S-31D.**

Write for literature and prices

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MISSOURI — BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada: PARMELEE, LTD. Toronto—Montreal

If you write maker identify as **IEN - 6536**

Boost Low Voltages

Install an Allis-Chalmers dry-type transformer right next to the load it serves — on overhead trusses, walls, platforms, or directly on the machine. You'll get higher motor, lighting, and thermal efficiency, resulting in economical utilization of power.

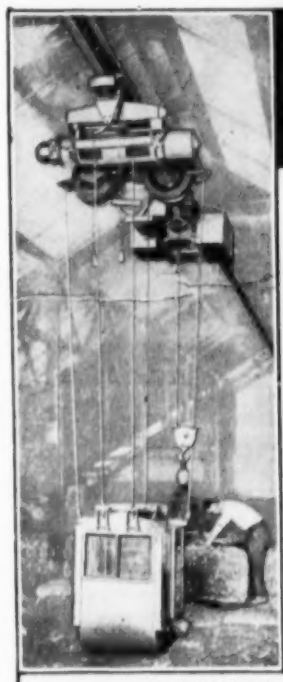
Installation is easy because knockouts are provided for connecting conduits directly to transformer case. System cables are connected to transformer terminals in roomy compartments. No vaults or expensive enclosures are needed. Install A-C dry-type transformers and forget them except for periodic inspections. No insulating liquids to mess with; no gauges or gaskets to fuss with.

Call your nearest A-C district office for full information or write Allis-Chalmers, Milwaukee 1, Wisconsin.

A-3958

ALLIS-CHALMERS A-C

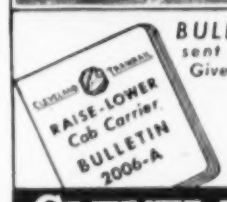
If you write maker identify as **IEN - 6537**



RAISE-LOWER CAB CARRIER

Cuts Handling Costs ½ to ⅔

- Permits one man to handle all operations when moving materials with a cab-controlled overhead system. Operator lowers cab to floor or top of materials when attaching or detaching load on hook. No floor men needed. Carrier will not travel until cab is in high position. All motions motorized.



BULLETIN 2006-A sent free on request. Gives complete details.

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4218 East 285th Street, Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as **IEN - 6538**

WHICH ONE WOULD YOU CHOOSE?

If you don't know offhand, don't worry about it. Buy Dunham specialties and you're sure to get traps and valves that are "just right" for your system. Since Dunham makes the most complete quality line of Heating Specialties available, why waste time shopping around?

Just depend on Dunham for *all* your traps and valves —and save time as well as steam. For full details, WRITE FOR BULLETIN 1501-11.

DUNHAM

C. A. DUNHAM CO.
400 West Madison Street, Chicago 6, Illinois
HEATING SPECIALTIES

Quality first for fifty years

If you write maker identify as IEN - 6539

STOP THE BIGGEST THIEF IN AMERICA

OAKITE GIVES YOU THREE WAYS TO FIGHT RUST

Day and night—wherever your steel is stored or handled—RUST, the biggest thief in America, is robbing you of production, robbing you of profit

Oakite can help you defeat rust these three ways:

1 By removing rust from raw steel.

2 By preventing rust during processing.

3 By preventing under-coat rusting of painted products.

FREE For the Oakite Anti-Rust Kit describing these ways to stop RUST in your plant, write to Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

If you write maker identify as IEN - 6540

This girl is saving money for the firm ...and she likes MOSINEE towels better!

One user reports reductions of 40% to 50% in towel consumption in washrooms serving about 4000 people every 24 hours, after installing MOSINEE Turn-Towl Cabinets with "push button" control. Fewer towels are needed because of the super-absorbency of Mosinee pure sulphate towels, and Mosinee "Controlled Type" Cabinets also help reduce towel consumption. A trial installation in your own washrooms will prove this.

MOSINEE Sulphate Towels

means better towel service at less cost.

BAY WEST PAPER CO.
1114 West Mason Street
GREEN BAY • WISCONSIN
Division of Mosinee Paper Mills Co.

Send For MOSINEE SAMPLE TOWELS and data on Controlled Cabinets

If you write maker identify as IEN - 6541

SLOW SPEED VERTICAL DRIVES FOR EVERY JOB...

If you have an application requiring vertical drives to operate at slow speed, you will find a complete line of enclosed vertical drives at Foote Bros. These drives are newly engineered with precision generated gearing backed by advanced engineering, new techniques in manufacture and better control of material. May be had with standard output shaft or with extended shaft. Mail the coupon for information.

Foote Bros. Gear and Machine Corporation
Dept. IEN, 4545 So. Western Blvd.
Chicago 9, Illinois

Please send me information on Foote Bros. Vertical Drives.

Name.....

Address.....

City.....State.....

Hygrade Drives

Hygrade with Extended Shaft

Line-O-Power Right Angle

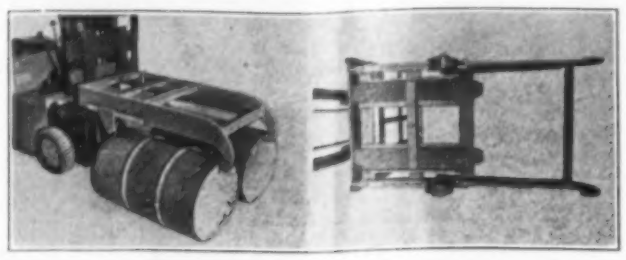
Foote Bros.-Louis Allis Gearmotors

Worm-Helical Gear Drives

If you write maker identify as IEN - 6542

TRUCK . . Pickup attachment for drums measuring 26 to 38 inches

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.



Rear fingers are spring backed

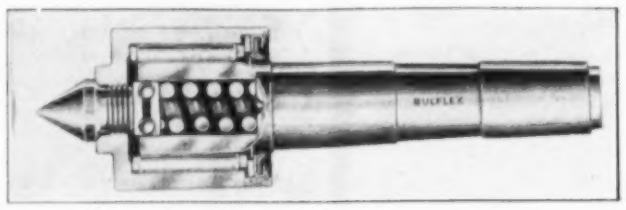
New attachment mounts on the forks of the company's power lift trucks to pick up full or empty drums that are lying on their sides either singly or in pairs. The attachment measures 26½ in. in width and weighs about 300 pounds.

The operator tilts the truck uprights back and lifts or lowers the attachment so its rear fingers will engage the drum rims as the truck moves forward. When these fingers meet the drum the operator tilts the uprights forward until the forward fingers drop into position at the front. The truck is then backed up to secure the grip of the forward fingers and the load can be lifted. The rear fingers can be moved along their supports to pick up drums 26 to 38 in. in length.

If you write maker identify as IEN - 6543

CENTER . . Live spindle design, ball and roller bearing, seven sizes

Source: BULTOOL CO.
P. O. Box A-5094, Southfield Sta., Detroit 35, Mich.



Bultool Bulletin

Tool steel tip is threaded into the housing of this new Type-FHH spring loaded live center. The housing rides on roller bearings. The center is backed by a ball thrust bearing and a preloading spring. The assembly is available in seven Morse taper sizes and in equivalent B. & S., Jarno and Morse-Hendey or straight shank. The center tip is ground on its own bearings. Thrust capacity ranges from 300 to 7,500 pounds. List price is $29.50 to $235 in the Morse taper line.

Identify as IEN - 6544

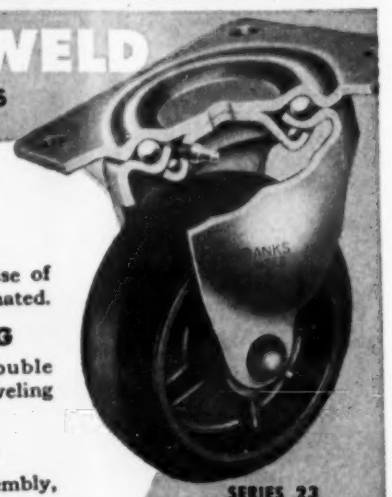
Tractive effort is maintained at all of the axles of an electric locomotive, even through one momentarily looses its wheel grip on the rails, by installation of a new control. This control applies on the individual axles so voltage becomes unbalanced when one motor speeds faster than the others. The unbalance removes power for an instant from all the axles. Then it resumes the drive gradually enough so all wheels rotate at the same speed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6545

NEW CONSTRUCTION

LOCK-WELD SWIVEL CASTERS (Patented)



NO KING PIN
the greatest single cause of caster failure is eliminated.

EASIER SWIVELING
rigid alignment of double ball race increases swiveling efficiency.

SUPER STRENGTH
projection welded assembly, no wear between moving parts. Patented leg design prevents bending and buckling.

SERIES 23 PRESSED STEEL SWIVEL CASTERS SIZES 4"-6"

(SINGLE BALL RACE CASTERS—SERIES 21—SIZES. 2"-6")

THE Fairbanks COMPANY
393 LAFAYETTE STREET • NEW YORK 3, N. Y.
Branches: New York 3 • Pittsburgh 22 • Boston 10 • Rome, Ga.

VALVES • DART & PIC UNIONS • TRUCKS • CASTERS

If you write maker identify as IEN - 6546

Let Speer help you with your brush needs...

Speer has been a carbon and brush specialist for over 50 years. Every Speer design is application-tested *two-ways*—in exhaustive laboratory tests and in extensive on-the-job runs—to give you

Even Wear • Improved Commutation • Reduced Vibration • Longer Brush Life

Speer brushes are made under careful quality control every step of the way—molding, extruding, baking and finishing. Speer has developed over 100 different grades of carbon-graphite, graphite, electro-graphitic and metal-graphite to suit every application—from jet engine starters to Diesel locomotive generators.

Write today for complete information

A Speer application-tested brush for every use:
motors • ignition systems
power plants
generators • rotary
convertors • power tools
starters • subways
accounting machines
windshield wipers
Diesel locomotives
household appliances

SPEER Carbon Co.
St. Marys, Pennsylvania
DIVISIONS:
Speer Resistor • Jeffers Electronics
International Graphite & Electrode

If you write maker identify as IEN - 6547

measure the TEL in Gasoline *Accurately-Easily* with FISHER TEL-METER

Tetraethyllead in gasoline is measured by polarographic means in this unusual instrument and the amount in milliliters per gallon is read directly on an illuminated scale.

Fifty milliliters of sample are required for one determination and the working range of the TEL-Meter is 0 to 5 ml of TEL per gallon. It is based on the polarographic method tentatively adopted by ASTM to supplement their method D 526. The TEL-Meter is easy to operate and no special technique is required.

The instruction manual supplied with the TEL-Meter contains complete directions for preparing the standard cadmium solution and a standard lead solution. It is immediately available from stock.

Write for complete information and description of Fisher TEL-Meter and other petroleum testing equipment including the famous Fisher/Tag line.

FISHER SCIENTIFIC
717 FORBES ST. PITTSBURGH 19, PA.

If you write maker identify as IEN - 6548

Hardness testing made *Easy!*

Save Time!
Test Accurately!

Ames PORTABLE HARDNESS TESTERS

Frequent hardness testing of metals before and during fabrication and after heat treating is essential today for best results.

Ames Portable Hardness Testers answer the need for a light weight, accurate, dependable tester that may be carried to the work for on-the-job testing. They are easy to use, require no skill, and get speedy, accurate tests wherever the work may be—no delays, no cutting off specimens—no waiting for laboratory tests.

Besides testing flats, rounds, tubing, etc. Ames Hardness Testers make tests that otherwise would be impossible, such as large gears, knives, saws, blades, struts, frames and assembled parts. Thousands are in use paying for themselves over and over again in time and materials saved.

Send for literature or ask for demonstration in your plant. No obligation.

AMES PRECISION MACHINE WORKS
Makers of Ames Precision Lathes and Bench Millers
Waltham 54, Massachusetts

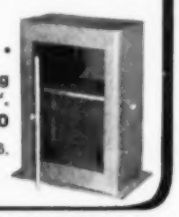
If you write maker identify as IEN - 6549

TOMLEE
Metal Cutting
BAND SAW

only $89.50
F.O.B. MINNEAPOLIS

NOW each bench can be equipped with a Tomlee to break your production bottleneck It's a low cost auxiliary to your heavy duty metal cutting machine, so often kept tied up with big work. The rugged, cast iron Tomlee will cut any metal that will run through its 5⅝" throat. Large work table easily tilts to 45° and is grooved to take a mitre gauge for compound angle cuts. Ball bearings throughout, operates at 4 speeds. Delivered complete with simple instructions, a set of guides and a ⅝" blade. *Write for bulletin.*

Accessories



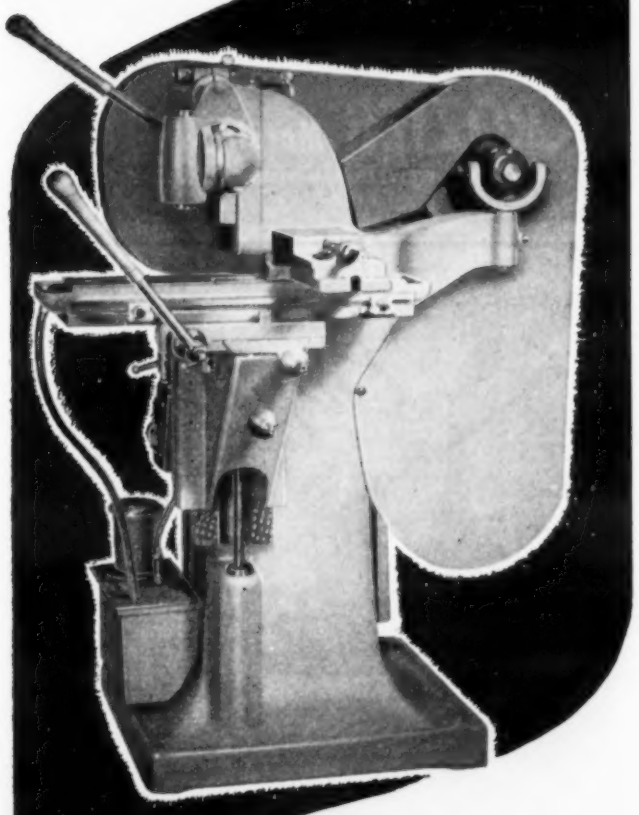
Band Saw Stand. **All-steel cabinet for mounting motor and storing accessories. 15"x23"x29¾". $37.50**
No. 31500 Mitre Gauge. **$5.00**
No. 455 Rip Fence. **$5.00**
½ HP Motor. **110-230 V. $43.50**
ALL PRICES F.O.B. MINNEAPOLIS

TOMLEE TOOL & ENGINEERING CO.
721 Washington Ave. N., Minneapolis 1, Minn.

If you write maker identify as IEN - 6550

Cut Costs
on Tool Room, Development and Mass Production Milling with
U. S. No. 1
HORIZONTAL MILLING MACHINES

Time-proved, shop-proved, profit-proved "U. S. No. 1" heavy duty, hand-feed milling machines are outstandingly America's No. 1 Machine Tool value. Easily adapted to production with automatic devices.



SEND FOR DATA AND SUGGESTIONS

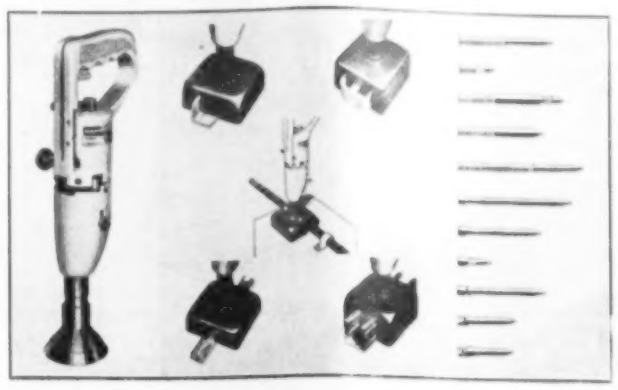
Suggestions as to how a U. S. No. 1 Milling Machine can cut costs on your particular production needs, as well as complete data on the basic machine and attachments, gladly furnished on request.

THE U. S.-BURKE MACHINE TOOL DIV.
Brotherton Road 5, Cincinnati 27, Ohio

If you write maker identify as IEN - 6552

FASTENING . . Steel anchor studs driven by cartridge in portable tool

Source: REMINGTON ARMS CO.
751 Barnum Ave., Bridgeport 2, Conn.



Illustrated details in Bulletin 957

New guards are now available for application on the nose end of the Model 450 Stud Driver, previously described IEN-6512-51. These guards are designed particularly to anchor special assemblies such as structural parts, conduit straps, channels, receptacle boxes, Unistrut parts, on foundation surfaces. The guards conform to the shape of the work. They cover it during the interval in which the powder-filled cartridge is driving the stud. They also position the work.

The tool employs a gun powder charge in a 32-caliber cartridge to drive a hardened steel stud into steel, concrete, masonry, wood, structural materials. The action replaces drilling and stud setting by conventional means. Maximum penetration is ¾ in. in mild steel.

Cartridges are color coded by the strength of the charge. A recess in the end of a plastic plug in each cartridge receives the stud. This plug is expelled with the stud, protects external threads from damage in firing. The studs are heat treated alloy steel. They range in length from ⅝ to 2¾ inches. Four types have a nail head, a break-off head for semi-flush mounting, internal threads and external threads.

If you write maker identify as IEN - 6553

STORING . . Tubular steel rack takes skid mounted loads on channels

Source: AMERICAN METAL PRODUCTS CO.
5957-61 Linsdale Ave., Detroit 4, Mich.

Literature on request

Square section tubes, made of steel in this new rack, are fitted with quick acting clips for assembly between horizontal and vertical members. Vertical units fit over insert fingers to build a structure to fit an available space. Channels apply on the horizontal members to support loaded skids as shown in the illustration. Standard, heavy duty and extra heavy design can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6554

new NORGREN

transparent bowl filters

Now, more efficient ¼", ⅜", ¾" and 1" sizes.

AUTOMATICALLY remove corrosive moisture and abrasive foreign matter from compressed air lines.

FLOW: ¼" and ⅜", 0 to 30 cfm. ¾" and 1", 0 to 140 cfm.

PRESSURE: to 150 psi.

TEMPERATURE: 40° to 120° F. 25 and 64 micron sintered metal filter elements available.

WRITE FOR CATALOG SHEETS 486, 481.

C. A. Norgren CO.
3432 So. Elati St., Englewood
IN COLORFUL COLORADO
Valves • Filters • Regulators • Lubricators • Noise Assemblies

PIONEER AND LEADER IN OIL FOG LUBRICATION FOR 25 YEARS

If you write maker identify as IEN - 6555

I SEE A BRIGHT FUTURE FOR YOU...

. . . when you depend on UMH METAL HOSE for long, efficient service

Profit by the experience of thousands of others who have proved that UMH METAL HOSE renders maximum service under stress, costs less in the long run, gives greater satisfaction. Name any conveyance problem where flexibility and durability are a must . . . and UNIVERSAL will provide the right type of metal hose for the most exacting job.

UMH
Seamless Flexible Hose, leakproof under high pressures and resistant to vibration.

UMH
Interlocked High Pressure Hose with asbestos packing.

UMH
Interlocked Exhaust and Blower Tubing, up to 12" I. D.

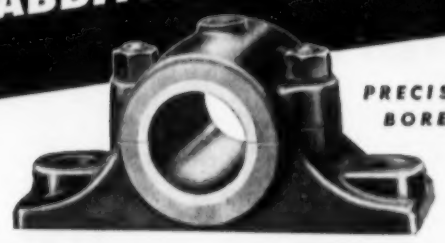
This is just a part of the complete line of UMH Flexible Hose that solves every conveyance problem.

Send us an outline of your requirements . . . and ask for Catalog U-101 . . . today!

UNIVERSAL METAL HOSE CO.
2131 SOUTH KEDZIE AVENUE • CHICAGO 23, ILLINOIS

If you write maker identify as IEN - 6556

DODGE BABBITTED BEARINGS



PRECISION BORED!

TRUE RUNNING!

DEPENDABLE!

● There's a *big* difference between a Dodge Journal Bearing and a common flat box — a difference that pays off in longer years of service, smoother operation, power savings! Dodge Journal Bearings are precision bored and faced — to insure maximum bearing surface for radial and thrust loads . . . Solid or Split Journal. Shaft sizes from 1/2" to 3-15/16". Stocked by Dodge distributors. Write us for full details.

DODGE MANUFACTURING CORPORATION, 600 Union St., Mishawaka, Ind.

DODGE
of Mishawaka, Ind.
FIRST IN POWER TRANSMISSION MACHINERY

If you write maker identify as IEN - 6557

This Bond 36-A Caster is Your Best Buy for DEPENDABLE SERVICE

C-136-A Series — Double Ball Race Swivel Caster equipped with Roller Bearing Celoron Wheels.

Ask your industrial distributor . . .

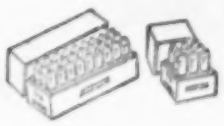
he knows that Bond 36-A Series Casters fit most service requirements. These universally used, completely dependable casters incorporate a fork, base and king bolt construction that distributes the load *evenly*. Two ball races of almost equal diameter, set one below the other, permit *easy swiveling*. All moving parts in the ball race are pressure lubricated.

Remember, *your best buy is Bond*— and your distributor will be glad to help you select the right Bond casters for your jobs. Ask your distributor for a copy of the Bond Catalog K-38 or write direct.

Bond 1-A Series Stationary Truck Casters give dependable service as companion casters to the Bond 36-A Series Casters.

BOND FOUNDRY & MACHINE CO.
Manheim, Penna.

If you write maker identify as IEN - 6558



STEEL STAMPS

Three grades for every pocket book

HERCULES HOLDERS

and TYPE for gang numbering and interchangeable marking by hand or press.

when you need numbering machines, marking machines and marking products remember— "ACROMARK means accurate marking"

STANDARD AND SPECIAL MARKING MACHINES

Hand— Air-Power

METAL and PLASTIC MARKING INKS

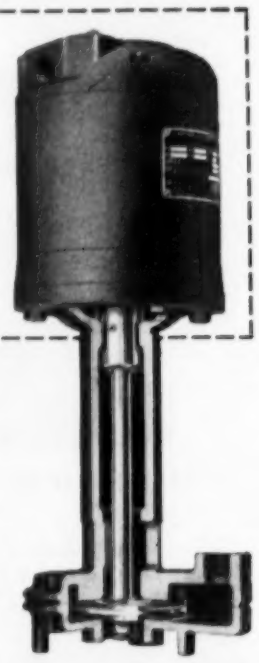
ACROMARK

THE ACROMARK COMPANY

7 MORRELL ST., ELIZABETH, NEW JERSEY

If you write maker identify as IEN - 6559

Motor-Driven Centrifugal Pumps That Dirt Can't Hurt!



Here's a complete line of ten different Motor-Driven Centrifugal Pumps that are completely protected from damage by dirt or abrasives. Hydraulically balanced, their design eliminates metal-to-metal contact below water level. Motors are of standard NEMA design, for easy replacement, and totally enclosed against dust or vapor.

You'll find that the design simplicity and sound construction of these Brown & Sharpe Pumps make them ideal for countless applications where grit or foreign substances may be present. Write for Pump Catalog. Brown & Sharpe Mfg. Co., Providence 1, R. I., U.S.A.

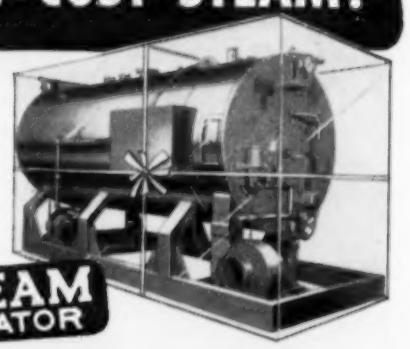
BUY THROUGH YOUR LOCAL DISTRIBUTOR

Brown & Sharpe

If you write maker identify as IEN - 6560

TROUBLE-FREE PACKAGE for LOW-COST STEAM!

10 to 600 h. p. 15 to 200# OIL or GAS



AMESTEAM GENERATOR

- Complete — ready to connect and operate.
- Saves labor — fully automatic.
- Saves fuel — 80% guaranteed efficiency.
- Easy maintenance — all parts readily accessible.

WRITE FOR FREE BULLETIN TODAY

AMES IRON WORKS INC.

BOX F-63 OSWEGO, N. Y.

AMES IRON WORKS
Box F-63 Oswego, N. Y.

Gentlemen:
Please send me further information on AMESTEAM GENERATORS and name of nearest representative.

NAME .....

COMPANY .....

ADDRESS .....

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-18

Last month we reported the sale of the last available copy of Thomas' Register in the 1953 edition. We did not tell you, however, that we have a connection, Specialty Sales Service, 6 Ames Ave., Rutherford, N. J., through which you can secure sets of the 4-volume issue for last year, 1952. The Rutherford company makes a business of purchasing and reselling the year-old issue, thousands of which are still in active service. You can place your order for the 1952 edition.

YOUR CURRENT NEEDS — IEN S-19

We hope you will remember our offer to assist with source information at any time you want it and cannot find it readily. All you need to do is tell us what you want. We will name a number of places where you should be able to get it. If we cannot do this we will publish an item in our "Wish I Had" column and ask for help from all of IEN's readers. This service is free.

YOUR OWN NEW PRODUCTS — IEN S-20

IEN's editorial content is concentrated, as you probably know, on news of new developments in industrial products and on new literature covering product subjects of general interest across the industrial field. Please bear in mind that we will be happy to tell our other readers about the things your own plant is making for their possible use. There is no charge for the descriptions. We can base them on data that you or your publicity manager sends to us. If you have a new product and want us to get in touch with your publicity department just let us know and we will carry on from there.

WOULD YOU BE INTERESTED? — IEN S-21

A set of IEN issues for one year, assembled into a bound book, can be made and shipped for estimated cost of $20. If you would be interested in such a bound reference book, please let us know by checking the number above on your Service Slip and returning it. The idea is tentative at present. It could be started in 1954.

TAX FACT — IEN S-22

If you put aside all the money you earned between January 1 and April 22, you can say you have been working for yourself since that April date. If you spent any of it you will do well to make an accounting so you can see how many days you still have to go before your tax obligations have been met for the year. We have this tax fact from the Chamber of Commerce of the United States.

Best U. S. investment:

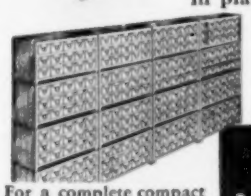
United States Savings Bonds

If you write maker identify as IEN - 6561

FOR ALL SMALL PARTS STORAGE

"E-Z-C" PLASTIC DRAWER CABINETS — with LARGER 2-INCH DEEP DRAWERS

Here's the newest, low-cost multi-purpose storage cabinet — strong enough to hold 15 drawers full of lead, yet minimum light in weight. The see-thru clear plastic drawers (¾" deeper than average size) show at a glance the parts or equipment they are storing. Increased convenience from the deeper drawers—15 drawers hold any and all parts, office supplies, etc.—for use in plant, office or home.



- Removable Dividers in Each Drawer
- Electric Weld All Steel Cabinet
- Name Plate Slot in Each Drawer
- Safety Catch Prevents Any Spilling

For a complete compact storage room, you can stock E-Z-C Cabinets up, side by side, or back to back. Send for descriptive literature.

KLEER-VUE MANUFACTURING CO.

636A PENN AVE. PITTSBURGH 22, PA.

If you write maker identify as IEN - 6562

Can our product help you improve your product?

This is **INNER-SEAL.** It's extremely durable, extremely effective . . . with many features that eliminate sealing problems in the manufacturing of countless products.

Inner-Seal's bead is of *live sponge rubber* which compresses under pressure, then springs back into shape. Its flange is of *woven spring wire,* tough but flexible enough to fit snugly around corners. Its coating is of *waterproof neoprene* . . . designed for sub-zero or tropical temperatures, sunlight, humidity, grease, oil or abrasion. Available in various dimensions. Standard Inner-Seal in many colors . . . heavy-duty "dumb-bell" type in black . . . special types can be made to order.

Although Inner-Seal is most widely known in the refrigeration, railway, shipping and automotive fields, it's continually finding many new applications. Maybe *you* have one . . . maybe we can help!

FREE SAMPLES and complete information. *Write today.*

Bridgeport INNER-SEAL Live Rubber WEATHER STRIPPING

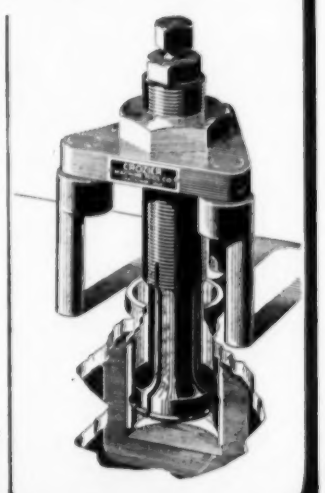
BRIDGEPORT FABRICS, INC., BRIDGEPORT 1, CONN.

If you write maker identify as IEN - 6563

NEW EXTRACTOR

removes bushings from blind holes ...cuts time 75 per cent

The entirely new method of extracting bushings, bearings, sleeves, liners, etc. Eliminates necessity for machining, minimizes the hazard of injury to casings or excessive dismantling of equipment, handles holes from ½ to 2"—over 5 tons have been extracted with unit. Eliminates as much as 75 per cent of labor and time, slashes inventory.



For complete information write Department IEN-6.

CROZIER Machine Tool Co.

684 NO. PRAIRIE AVENUE, HAWTHORNE, CALIFORNIA

If you write maker identify as IEN - 6564

Engineered MOLDED RUBBER PARTS

Serving the —
Aircraft
Automotive
Appliance
Machinery
Electrical & Electronic
Safety Equip.
Instrument
and other industries

ACUSHNET specializes in "precision" molded rubber parts engineered to specifications. Utilizing the most modern techniques our Engineering Staff constantly is developing new approaches to old problems. By ingenious mold designing and compounding, yesterday's skepticism of rubber for critical uses has changed to complete confidence in this versatile material for application in countless vital assemblies.

Acushnet PROCESS COMPANY

Send for your copy of the Acushnet Rubber Handbook.

Address correspondence to 782 Belleville Ave., New Bedford, Mass.

If you write maker identify as IEN - 6565

Easy-low cost

RESOLITE SKYLIGHTING, and NO MAINTENANCE!

For skylighting new or old corrugated sheet buildings, just lap in sheets of translucent, corrugated RESOLITE — no framing, no flashing, no caulking!

And you can eliminate daytime lighting costs through Resolite's excellent interior diffusion of daylight.

Rugged Resolite is a Fiberglas-reinforced resin plastic; it's shatterproof, weatherproof and inert to ordinary acid or alkali industrial fumes.

Investigate Resolte for skylighting your industrial buildings — TODAY! For complete information and name of your nearest distributor, write:

RESOLITE CORP., Rt. 19, Zelienople, Pa.

If you write maker identify as IEN - 6566

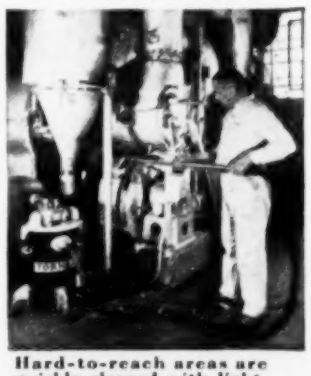
need a quick pick-up?

Here's what **TORNADO**® *does to coffee*

The Richheimer Coffee Co. makes a practice of immaculate housekeeping. They have a constant problem because the paper thin hull, or "silver skin," that comes off the green coffee beans during roasting results in fine, dust-like chaff. Daily processing of tons of green coffee causes clouds of this chaff to settle on the floor and processing equipment.

Here is where Tornado, with air speeds above 300 m.p.h., goes to work to give their plant a "quick pick up." Easy to use accessory and floor tools clean hard-to-reach places on their equipment—get into corners and around machinery bases on the floor.

To beat a tough food processing problem or any other industrial housekeeping problem, follow the lead of hundreds of satisfied customers. Find out more about Tornado.



Hard-to-reach areas are quickly cleaned with light, efficient Tornado accessory tools.

WRITE FOR BULLETIN 600

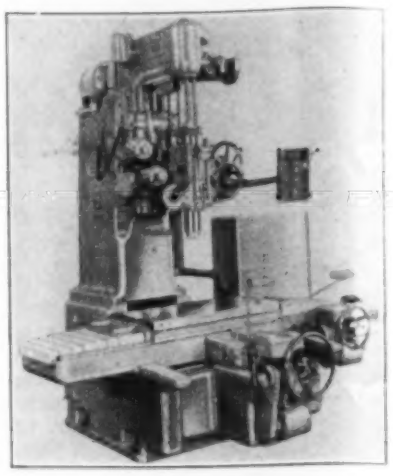
BREUER ELECTRIC MFG. CO.

5108 North Ravenswood Avenue • Chicago 40, Illinois

If you write maker identify as IEN - 6568

JIG BORING . . Precision machine, electric gaging, ball bearing spindle

Source: PRATT & WHITNEY
49 Charter Oak Blvd., West Hartford 1, Conn.



Details on request

Model 2E designates a new unit in the company's line of jig boring machines, previously described IEN-7856-52. The new machine is equipped with a 22 by 44-in. table having 36 in. of longitudinal travel and 22 in. in transverse movement. Maximum height, table to spindle, is 27 inches. Special columns can be supplied to increase this height by 6 or 10 inches.

The spindle quill is hardened, ground and lapped. It rides on 288 precision balls, preloaded between the quill and liner to a total bearing pressure of 6,000 pounds. The head bore is provided with a hardened and ground steel liner, deep frozen for assembly and lapped after it is in place. Milling feeds are practical for both table and carriage.

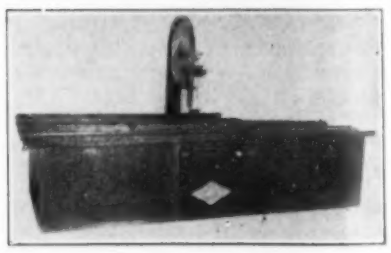
Operation of the head assembly, in vertical direction, is controlled by push buttons. An interlocking mechanism clamps the head in position on the column and releases it automatically. Twelve spindle speeds range from 37 to 1,800 rpm. Eight spindle feeds are from 0.0005 to 0.015 ipr., both up and down. Rapid power travel, at 60 ipm., is provided. Stepless milling feed is 1 to 15 ipm.

Electrolimit measuring units are mounted for longitudinal and transverse movements. Both are independent of the traversing screws. Each provides for basic 1-in. spacing electromagnetically from a solid notched master bar. Each registers a zero reading on an indicating meter without making physical contact. Fractional inches are set by moving a small electro-magnetic head by means of a precision micrometer head graduated to read to 0.0001 inch.

If you write maker identify as IEN - 6569

SAWING . . Band saw machine to cut non-ferrous metal plate stock

Source: WILLIAM LAIDLAW INC.
99-103 Winter Ave., Belmont, N. Y.



Built to order

Large plates of material such as aluminum, brass, copper are secured on the sliding table of this new Model JM-30 band saw machine. The table is fed by hydraulic pressure to cut the plate stock into small pieces such as those shipped from warehouses. The machine has single-cut capacity to 8 ft. in length. It will cut a maximum 15 in. in width.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6570

ROWE ADJUST-A-DOCKS

Eliminate Costly Hand Loading

1. Brings dock to level of any truck bed.
2. Speeds loading by fork and lift truck directly into carriers.
3. Eliminates dock hazards.
4. Floats at truck level.
5. Sturdy hydraulic finger-tip control.
6. Pays for itself in 30 days.

ADJUST-A-DOCK

LOOK into the SAVINGS you can make in freight handling with Rowe Adjust-A-Docks. WRITE FOR BULLETIN and complete information.

ROWE METHODS, INC.

2534-H DETROIT AVENUE • CLEVELAND 13, OHIO

If you write maker identify as IEN - 6571

TO THE INGENIOUS

Not familiar with this

NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity — plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today.

Lower cost finishing with quality control for laminated plastic panels . . . because Fullergript made possible a brushing action leading to economies in other processes.

INDUSTRIAL **Fuller** BRUSH CO. DIVISION

3583 MAIN STREET • HARTFORD 2, CONN.

Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

If you write maker identify as IEN - 6572

GET RID OF WIRES

and get foolproof connections in

RADIOS

AMPLIFIERS

SWITCHBOARDS

METERS

Print your circuits with Du Pont Conductive Coatings—reduce costs and time

Highly conductive coatings of low resistance are easily obtained by spray, brush, dip or stencil to metals and non-conductors. These coatings can be used to make economical, lightweight, compact high-voltage capacitors; static shields to replace usual cans and foils; resistors and solder seals. For more information, send for Bulletin CP 2-1248. E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Dept., Wilmington 98, Del.

DU PONT ELECTROCHEMICALS

DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

If you write maker identify as IEN - 6573

Speed Up Material Handling

Here's a handy, mobile crane for lifting or loading jobs around your plant. Ideal for dismantling, moving or erecting machinery . . . loading and unloading structural iron, pipe, bars, lumber and equipment of all types. The UNIT 357 is self-propelled . . . rides on rubber at road travel speed . . . is easy to maneuver even in cramped yard conditions. Operated by ONE man . . . powered by ONE engine . . . swings in a 360° circle. Full vision cab gives complete visibility. Promotes Safety. Write for Catalog.

UNIT CRANE & SHOVEL CORP.

6605 W. Burnham Street, Milwaukee 14, Wis., U. S. A.

UNIT

CRANES • CLAMSHELLS • MAGNETS

If you write maker identify as IEN - 6574

When It's Grinding or Pulverizing STURTEVANT EQUIPMENT DOES THE JOB FAST!

Whether you grind soft or hard materials, there is a Sturtevant Grinder or Crusher exactly suited to your requirements.

Tough and rugged, Sturtevant Equipment has the built-in stamina to stand up under continuous operation. Most of this equipment has the "open door" accessibility which makes cleaning easy.

Look into Sturtevant Grinders and Crushers for your applications. These machines will give you the exact mesh you want . . . cut your costs by increasing production. Write today.

Sturtevant Mill Company
113 Clayton Street • Boston 22, Mass.

If you write maker identify as IEN - 6575

FREE FOLDER
tells when to consider
SMALL ZINC DIE-CASTINGS
1000 per lb. to 3 per lb.

Explains how Dollin's high-speed automatic equipment cuts piece costs . . . eliminates machining and assembly operations. Provides check list of cost factors that can be eliminated . . . tells action to take to find out actual savings. Send for *Small Parts Folder* plus *Samples*. DOLLIN CORPORATION, 630 So. 21st St., Irvington 11, N. J.

Zinc & Aluminum Die-Castings in All Commercial Sizes

If you write maker identify as IEN - 6576

Industrial CRANES
Improve Your Profit

Pillar Cranes Up to 6 Tons Boom Swings 360 Degrees

Handle Material to and from Open Cars, Trucks and Machines at *Lower Cost*

WRITE FOR LITERATURE

INDUSTRIAL CRANE & HOIST CORPORATION
(formerly Industrial Equipment Co.)
321 NORTH ADA STREET CHICAGO 7, ILLINOIS
Overhead Cranes • Jib Cranes • Monorail Systems
Crane Runways
Representatives in Principal Cities

If you write maker identify as IEN - 6577

TESTING . . Electric instrument detects shorts in rotors, stators

Source: CROWN INDUSTRIAL PRODUCTS CO.
726-30 Amsterdam St., Woodstock, Ill.

About $38

Internal Growler designates a new electric instrument to be held in a operator's hand and moved over the surface of a stator or rotor. The unit energizes suspected coils while a self-contained meter and detector scan the energized coil area. Any short in this area is indicated by a definite movement of the needle on the meter that forms a part of the assembly. A positive reading occurs when directly above the short.

Overall dimensions are 7½ in. in length with the meter adjusted to horizontal position. Height is 4½ in. with the meter adjusted vertically. Width is 2¾ inches. Operation is on 115-volt ac. power supply.

If you write maker identify as IEN - 6578

CLEANING . . Flexible shaft machine to cut obstructions from a sewer line

Source: OSTER MFG. CO.
2055-59 E. 61st Place, Cleveland 3, Ohio

Universal motor

Cutting tools, of various designs, are attached to the end of the coiled spring that constitutes the flexible shaft "snake" in this new No. 420 Sewer Master. The shaft is held in a chuck and is fed forward, as it is power rotated, to remove roots, caked grease, chips, refuse. Control centers at a reversing switch to drive the shaft in either direction of rotation. Feed control is by a hand lever.

Assembly is on four rubber tired wheels. Weight is a little under 100 pounds. Standard equipment includes two 50-ft. "snakes" in welded steel holders fitted with ball bearing casters. The holders prevent whipping and keep the snakes in position to feed into a sewer line. Included also are the tools, extension cord and a carrying case. List is $345.

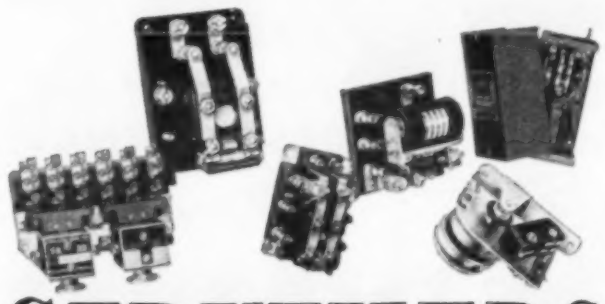
Identify as IEN - 6579

Combination cushion and rubber pad replace the female die in a new metal forming process developed under the trade name of Hidraw. Hydraudic Press Manufacturing Company has built the first 7,000-ton press to do the work. It is prepared to supply tools and presses rating from 1,000 ton up for specified operations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6580

If you write maker identify as IEN - 6581



STRUTHERS-DUNN

Standard relays and timers match 4 out of 5 requirements

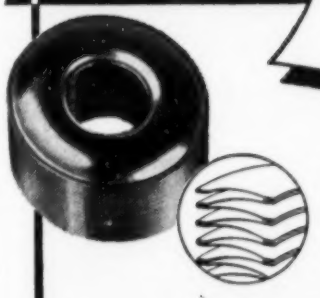
5,348 RELAY TYPES

STRUTHERS-DUNN, INC., 150 N. 13th St., Phila. 7, Pa.
BALTIMORE • BOSTON • BUFFALO • CHARLOTTE • CHICAGO • CINCINNATI
CLEVELAND • DALLAS • DETROIT • KANSAS CITY • LOS ANGELES
MINNEAPOLIS • MONTREAL • NEW ORLEANS • NEW YORK • PITTSBURGH
ST. LOUIS • SAN FRANCISCO • SEATTLE • SYRACUSE • TORONTO

If you write maker identify as IEN - 6582

Can You Use BELLMETS?*

*Metallic Diaphragm BELLOWS with Specific Mechanical, Electrical and Thermal Properties



- Convolutions electrically insulated from each other
- Contour construction to resist pressures exceeding 500 PSI
- Materials heat resistant to 500° F.

Bellmets represent a unique development in welded diaphragm bellows. All welds either on the inside or outside diameter (depending on whether operating pressure is to be internal or external) are replaced with a dielectric bonding material. The bonds are strong, slightly resilient, highly resistant to heat, and insulate each end of the bellows from the other.

Bellmets have already solved problems in engine noise attenuation, pressure switch simplification, circuit control at high pressures. Wherever heat, pressure, or electrical characteristics present a problem, job-engineered Bellmets — in a wide range of sizes and specifications — may prove the ideal solution.

WRITE TODAY for complete information, outlining your specific problem or interest.

BREEZE CORPORATIONS, INC.
41 South Sixth St., Newark, N. J.

If you write maker identify as IEN - 6583

New **"PULL-GEAR" SPEED-REDUCING PULLEY**
Increases Drill Press Capacity

Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity.

Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approximately 45 to 2000 RPM. Write for literature.

Made in 3 Motor Shaft Sizes ½" • ⅝" • ¾"

Some Territories Open to Jobbers

THE PULL-GEAR CO.
4118 E. 8-Mile Road Detroit 34, Mich.

WRITE FOR LITERATURE

If you write maker identify as IEN - 6584

NEW INDUSTRIAL HUMIDIFIER

BAHNSON TYPE E Self-Contained Unit Humidifier

Requires only water supply and electrical connection

NOTE THESE FEATURES!

- **HIGH CAPACITY**—Evaporates 3 gallons per hour with ¼ HP motor.
- **AUTOMATICALLY CONTROLLED** at any desired relative humidity.
- **SIMPLE TO INSTALL**—Just uncrate and suspend from ceiling.
- **ELECTRIC MOTORS** for all common current characteristics.
- **WATER SUPPLY** connection for ¼" tube or ⅛" pipe provided.
- **NEEDS NO** pump, duct, compressed air, steam, drain or floor space.
- **EFFICIENT** centrifugal atomization of ordinary city water.
- **TWO MODELS**, ¼ HP for high capacity, ⅛ HP for small rooms.

FOR COMPLETE HUMIDIFICATION SYSTEMS, FOR BOOSTING, FOR SPOT HUMIDIFICATION, FOR LABORATORIES

FOR TRULY DEPENDABLE LOW-COST HUMIDIFICATION — Bahnson Company, ENGINEERS AND MANUFACTURERS, WINSTON-SALEM, N. C.

If you write maker identify as IEN - 6585

..Fits like a Glove

WHATEVER YOUR ELECTRIC MOTOR REQUIREMENTS THE MOTOR CARRYING THE FAIRBANKS-MORSE SEAL WILL FIT THE JOB ...like a Glove!

A.C. or D.C. . . . single phase or polyphase . . . induction or synchronous . . . in all ratings and frame types —whatever the need, you can find the one motor best suited to the job in the complete line of Fairbanks-Morse Motors. Call your nearby Fairbanks-Morse electric motor branch for details, or write: Fairbanks, Morse & Co., 600 So. Michigan Ave., Chicago 5, Ill.

FAIRBANKS-MORSE,

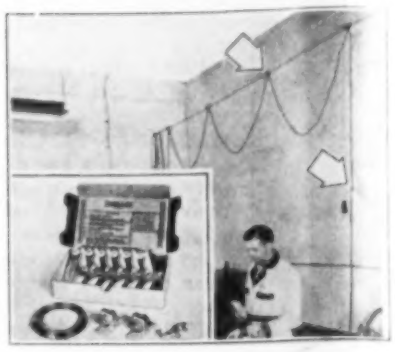
a name worth remembering

ELECTRIC MOTORS AND GENERATORS • MAGNETOS • PUMPS
DIESEL LOCOMOTIVES AND DIESEL ENGINES • FARM MACHINERY
SCALES • RAIL CARS • HOME WATER SERVICE EQUIPMENT

If you write maker identify as IEN - 6587

LIGHTING . . Wire rope and trolleys to suspend an electric extension cord

Source: J. T. TEMPLETON INC.
6430-34 Cass Ave., Detroit 2, Mich.



Keeps cord off floor

Travalite is a new assembly including a 50-ft. wire rope, wall fasteners, screws, a hook to suspend a portable lighting fixture and six wheel equipped cadmium plated trolleys. The wire rope mounts overhead, as shown in the illustration, by means of its fastenings and tightener. The trolleys support loops of an extension cord to the portable light. The hook attaches to the cord.

If you write maker identify as IEN - 6588

PAINTING . . Silicone enamel resembles porcelain, is flexible

Source: GLIDDEN CO.
11041 Madison Ave., Cleveland 2, Ohio

Specifications upon requst

Nubelon-S is a new silicone base enamel resembling porcelain in surface hardness and durability. At the same time the material remains flexible. It can be coated on fence wire and then the wire can be fabricated into fencing without chipping the surface. Recommended applications are in finishing appliances, metal furniture, prefabricated structures, screening, hospital equipment, concrete form surfacing. Application is followed by baking at elevated temperature to complete the coating operation.

If you write maker identify as IEN - 6589

PAINTING . . Electric spray gun for finishing, touch-up, stenciling

Source: WALDORF SALES CO.
361-65 Central Park Ave., Yonkers, N. Y.

No compressor

Electric vibrator in the aluminum die cast housing of this new spray gun actuates a small piston and cylinder. The piston draws paint, or other liquid, from the aluminum container and delivers it through the spray nozzle. Delivery is at pressure to 90 pounds. Operation is at 7,200 strokes per min. on 60-cycle 110-volt ac. The gun and its 8-ft. extension cord and plug carry the Underwriters' Laboratory label. List price is about $18.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6590

3574 Plants use this "Cold" GRAYMILLS DEGREASOR

THE SAFE, EASY, LOW COST WAY TO REMOVE OIL, CHIPS, GREASE, DIRT and PRESERVATIVES ON JOBS LIKE THIS:

Cleaning Dies and Tools, Hydraulic castings and parts, machined parts, stampings. Cleaning electric motors, machines and bearings. Ideal for maintenance work and many production jobs. No installation headache. Above model $214.50.

Send for complete 12 page catalog on 15 models.

GRAYMILLS CORPORATION
3709 NORTH LINCOLN AVENUE • CHICAGO 13, ILLINOIS
West Coast Offices and Warehouses — 4511 Melrose Avenue, Los Angeles — 538 Polk Street, San Francisco — 8030 Fortieth Avenue, N. E., Seattle 5

If you write maker identify as IEN - 6591

CUTTING COMPLAINTS

A pinch of dust or grit at your assembly line inspection bench or in the packing and shipping room can cause very expensive service calls later on. Spencer Vacuum is easily piped to each room and bench. It will speed production—save time in general cleaning and with special attachments, can collect water, pick up welding flux, reclaim materials and do 130 other jobs that are too expensive by hand. Ask for Bulletin No. 144.

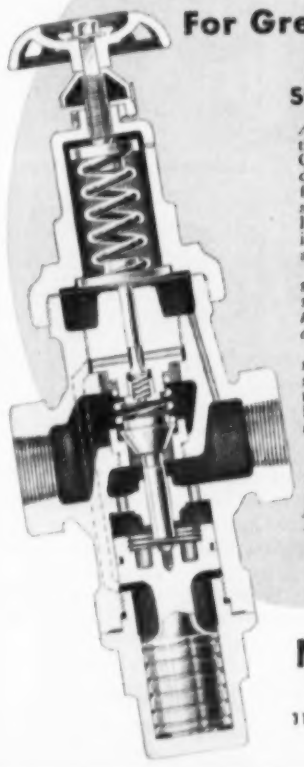
with SPENCER HARTFORD VACUUM

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD
466-H

If you write maker identify as IEN - 6592

Superfinished

For Greater Accuracy



Masoneilan No. 11 Steam Reducing Valve

All vital parts on this better-than-ever Masoneilan Pilot Operated Steam Pressure Reducing Valve are superfinished. Result, chances of sticking or corrosion are largely eliminated. Operation is extremely sensitive — more accurate than ever before.

What's more, service records indicate maintenance consists of *little more than keeping the moving parts clean.*

Initial pressure to 250 lbs. reduced to any desired pressure from 10 to 90 lbs. or 75 to 225 lbs. Sizes ½" to 2" bronze body. Also iron or steel.

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1188 Adams St., Boston 24, Mass., U. S. A.

If you write maker identify as IEN - 6593

FOR SPEEDY INSTALLATION... WITH MINIMUM INTERRUPTION OF WORK.....

Count On **CLOW** (Threaded)* **CAST IRON PIPE**

WHEN YOU REPLACE OR EXPAND. Leading engineering firms specify Clow Threaded Cast Iron Pipe for downspouts, waste and vent lines because of its corrosion-proof qualities and lifetime service.

Clow Threaded Cast Iron Pipe can be cut and threaded on the job with ordinary tools of the piping trade. Available with plain or threaded ends in 3, 4, 5, 6, 8 and 10" sizes in 18' lengths. Also furnished with integral calking hub on one end (other end plain) in 4, 6 and 8" sizes.

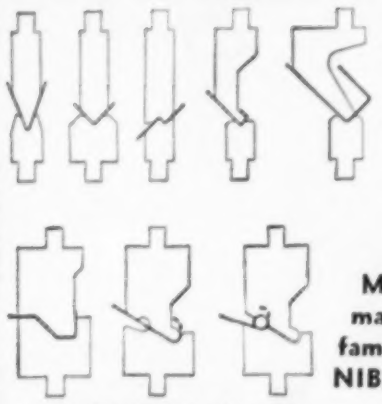
Write for Form 4-26-50 to: JAMES B. CLOW & SONS, 201-299 N. Talman Ave., Chicago 80, Illinois.

**Has the same outside diameter as steel or G.W.I. pipe*

JAMES B. CLOW & SONS
Wholesale Distributors of Pipe, Valves and Fittings for Industrial Use

If you write maker identify as IEN - 6594

BRAKE DIES



Made from FORGED CHISEL STEEL BILLETS

Made by the makers of the famous SEMCO NIBBLER PRESS

- MANY STILL IN USE EVEN AFTER 10, 20 AND EVEN 30 YEARS.
- THEY COST MORE BUT THEY LAST FOR YEARS.

Write for estimates on your work and ask for latest literature.

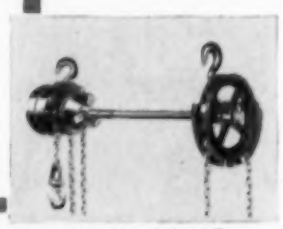
SEMCO

SERVICE MACHINE COMPANY INCORPORATED

200 MILLER STREET ELIZABETH, N. J.

If you write maker identify as IEN - 6595

GET "Special" CHESTER CHAIN HOISTS for special handling problems



Extended Handwheel Type

Low Headroom Trolley Hoist

...get faster service at CHESTER

If you have a special problem in your plant, in handling, lifting, lowering or moving . . . chances are excellent that there is a Chester Hoist "Special" that will simplify the operation and save you time and money.

For example, the Extended Handwheel hoist can be efficiently operated from a safe distance in lifting and moving hot, freshly painted or hard-to-handle loads. Or if floor to ceiling height in your plant is too limited for standard hoist and trolley equipment, the Low Headroom type with built-in trolley can easily solve that problem.

If you can use a Chester Hoist "Special" to facilitate your production, ask your distributor today—or write us for Chester catalog and tell us your "special" problem.

National PRODUCTS

CHESTER HOIST DIVISION
The National Screw & Mfg. Co.
Lisbon, Ohio

If you write maker identify as IEN - 6596

AMERICA'S BEST FACILITIES

for Meeting YOUR Sealing Problems

Our specialty is plastic sealing compounds for industry—for glazing, caulking, bedding, etc. . . . compounds to withstand high temperatures, acid action, etc. If we don't now make what you need, it can be developed in our laboratories. In our field, we have America's finest research and production facilities. Let us show you!

ACID RESISTANT CEMENTS

HI-HEAT COMPOUNDS

FURNACE AND BOILER CEMENTS

CHLORO-Seal

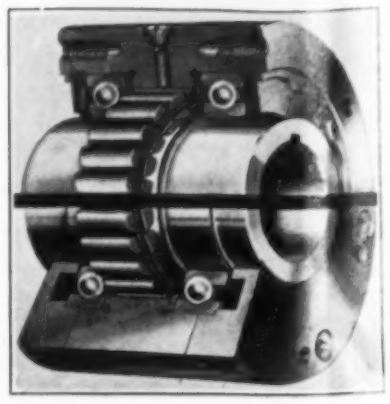
Chlorine producers save money using this famous plastic compound for sealing in and out pipe and cover joints in chlorine cell operations. CHLORO-Seal stays ELASTIC. It gives permanent protection—providing a cushion seal that won't crack or chip off due to expansions and contractions. Good for temperatures to 300 F. Try CHLORO-Seal for perfect satisfaction!

The ARMSTRONG COMPANY
1001 E. 103rd St., Chicago 28, Ill. EST 1911

If you write maker identify as IEN - 6597

DRIVE . . Over-running clutch, also for indexing and back stopping

Source: FORMSPRAG CO.
23591 Hoover Road, Van Dyke, Mich.



Made in three models

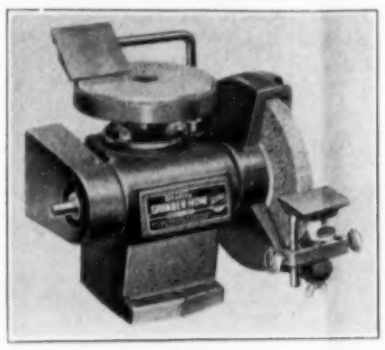
Bore size ranges from ¼ to 7½ in. with external diameter at 1¼ to 20 in. In the company's line of over-running clutches, previously described IEN-5736-41. The company has now taken over sale and manufacture of its plain and ball bearing assemblies after terminating its sales distribution contract with Morse Chain Company.

The inner race and the outer housing ride free, in relation to each other, in one direction. They are caused to rotate together, in the opposite direction, by the wedging action of a series of pivoted bars or sprags that are held in place by garter springs. Engagement and release are both instantaneous. Recommended speed is to 3,000 rpm. in the ball bearing design.

If you write maker identify as IEN - 6598

GRINDING . . Combination assembly of 6 in. grinding wheel and oilstone

Source: ATLAS PRESS CO.
2001 N. Pitcher St., Kalamazoo, Mich.



List is $31.50

Grinder-Hone is a new combination of grinding wheel mounted on a factory lubricated permanently sealed ball bearing shaft and a 5-in. oilstone, worm and gear connected, with one flat face presenting 120 grit and the other 320 grit. The oilstone is reversible by lifting it off its spindle and replacing it in inverted position. Tool rests apply at both wheels as shown in the illustration.

Drive is by a ¼ or ⅓-hp. motor supplied by the user to operate at 1,725 rpm. A ½ by 36-in. V-belt is required for the drive connection. Operating speeds are 3,000 rpm. for the grinding wheel and 110 rpm. for the oilstone.

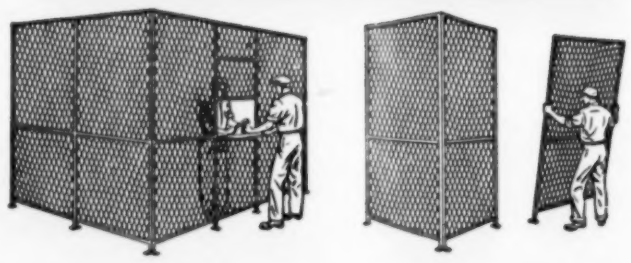
Identify as IEN - 6599

Wire sizes range from 0.005 to 0.5 inches in which the new Rockford Spring Company is prepared to work. The company is now in full production on springs for industrial uses. It is particularly interested in business involving accuracy, quality and prompt delivery.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6600

Protect TOOLS AND EQUIPMENT WITH ACORN WIRE MESH PARTITIONS



Provide Positive Protection

Acorn Wire Mesh Partitions, by enclosing tool cribs and stock rooms, prevent tool and parts pilfering, give tight control of tools, material and personnel in these areas. Divide large open spaces into efficient, separate departments, cut down confusion. Cost much less than solid walls, permit passage of light, air, sound and heat.

Simple, Quick to Erect

Made in inexpensive standard panels in two designs, Acorn Wire Mesh Partitions are easy to erect, take down, or move anywhere, with no need to move radiators or lights. Can be added to, or reduced in size. Doors can be moved, and corners made quickly to meet changing needs.

ACORN WIRE and IRON WORKS
5907 S. Lowe Ave., Chicago 21, Ill.

SEND TODAY for fully illustrated catalog. See why Acorn partitions are standard equipment in over sixteen thousand plants.

If you write maker identify as IEN - 6601

THE INDUSTRIAL POCKETSCOPE® BY WATERMAN

MODEL S-11-A

11"x5"x7" 8¾ lbs.

The Model S-11-A Industrial & Television POCKETSCOPE is a small, compact, lightweight instrument for observation of repetitive electrical circuit phenomena. The Industrial & Television POCKETSCOPE is a complete Cathode Ray Oscilloscope incorporating the Cathode Ray Tube, vertical, horizontal, and intensity amplifiers, linear time base oscillator, blanking, synchronization means and self-contained power supply. This Industrial & Television POCKETSCOPE uses the new 3" Cathode Ray Tube especially developed for this lightweight and compact instrument. The Industrial & Television POCKETSCOPE can be used, not only for AC measurements, but for DC as well, inasmuch as it has vertical and horizontal amplifiers which are capable of reproducing faithfully within —2 db. from 0 to 200 KC.

Vertical and horizontal channels: 0.1v rms/inch with response within —2DB from DC to 200 KC, Repetitive time base continuously variable from 3CPS to 50KC with positive sync, Intensity modulation either through Amplifier or direct, Blanking of return trace is optional, Trace expansion is at least twice screen face, Line voltage variations, variation of input impedances, or manipulations of controls do not bounce trace off screen. The Scope stabilizes immediately.

WATERMAN PRODUCTS CO., INC.
PHILADELPHIA 25, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE:

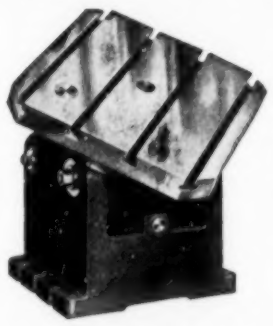
S-4-A	SAR	PULSESCOPE
S-5-A	LAB	PULSESCOPE
S-10-B	GENERAL	POCKETSCOPE
S-14-A	HIGH GAIN	POCKETSCOPE
S-14-B	WIDE BAND	POCKETSCOPE
S-15-A	TWIN TUBE	POCKETSCOPE

Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC TUBES and other equipment

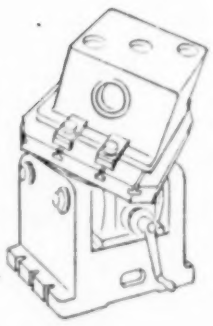
WATERMAN PRODUCTS

If you write maker identify as IEN - 6602

universal tables



save up to 50% of set up time on radials and boring mills



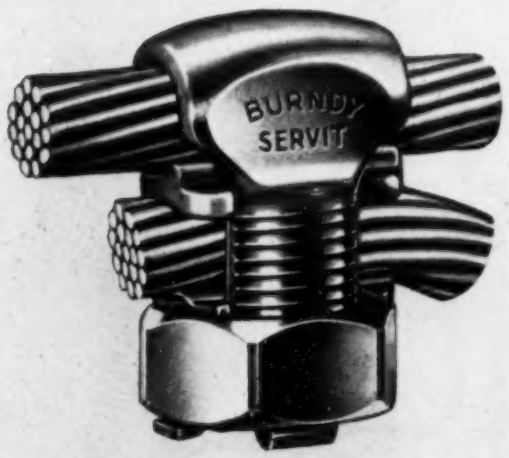
With one set up on Cincinnati Gilbert universal tables, you can drill at any angle up to 90° on five sides of a cube. Special feature: four-point support of the work in the lowered position takes strain off the worm, provides greatest possible rigidity of the work, best insurance of accuracy. Table sizes: 22" and 27" square. Height: 22". Four ¾" tee slots. Write for Bulletin 749.

THE CINCINNATI GILBERT MACHINE TOOL COMPANY
3366 BEEKMAN ST. • CINCINNATI 23, OHIO

RADIALS
BORING MILLS
ACCESSORIES

If you write maker identify as IEN - 6603

connectors for ALUMINUM



BURNDY

BURNDY ENGINEERING CO. INC.
NORWALK, CONNECT.

52-27

If you write maker identify as IEN - 6604

New! Low-Cost! - Wide-Range!

VARIABLE Speed Sheaves

Easily Attached to Any Machine

1/15 TO 15 HP.
RATIOS UP TO 8:1

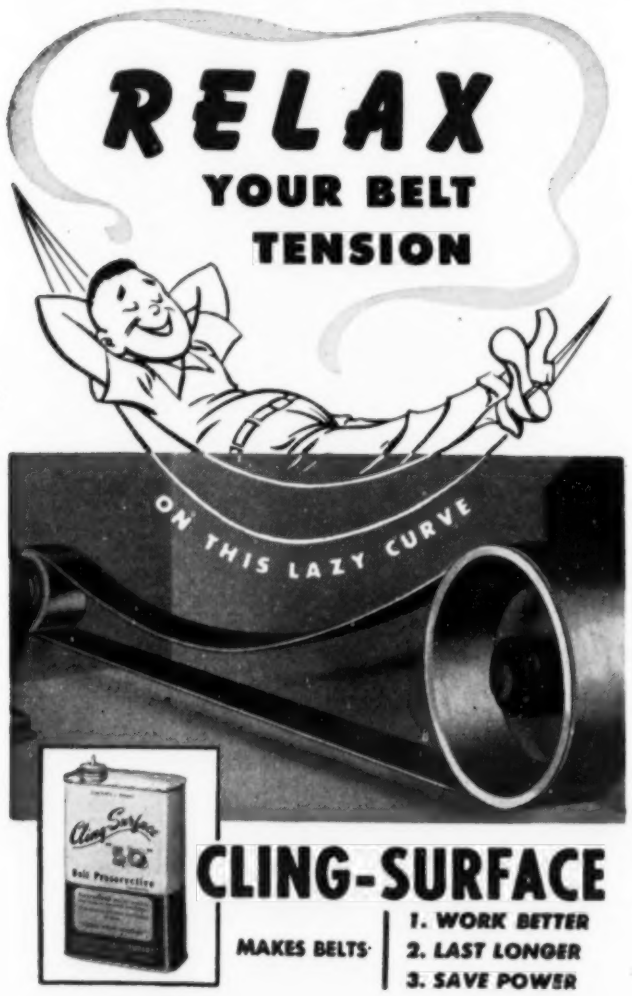
● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

- Standard V-belts
- Automatic belt alignment
- Fixed shaft centers
- LOW COST

Write FOR FREE BULLETIN

SPEED SELECTOR INC.
118-A Noble Court • Cleveland 13, Ohio

If you write maker identify as IEN - 6605



CLING-SURFACE

MAKES BELTS
1. WORK BETTER
2. LAST LONGER
3. SAVE POWER

Cling-Surface adds "grip" to your transmission belts, stops slipping and permits trouble-free, economical, "slack belt" operation as shown above.

Tight belts stretch under constant tension and require frequent "take ups"; they increase the friction load, waste up to 50% of your power and needlessly strain your bearings and shafting.

Easy-to-apply, Cling-Surface is the ONLY belt preservative that meets U. S. Government requirements and is the ONLY brand that DARES to recommend "slack belt" operation. GIVE IT A TRIAL AT NO RISK. Any belt properly treated with Cling-Surface may be operated "slack". If you don't agree that this method practically eliminates down time for belt repairs, makes your belts, bearings and shafting last longer and delivers more power to your machines, we'll GIVE YOU BACK YOUR MONEY. We've been making this offer since 1896! Ask your mill supply man or,

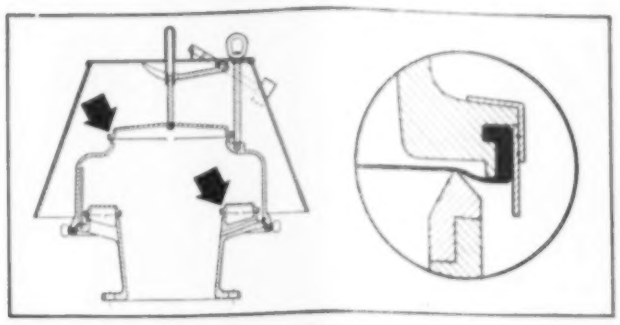
SEND FOR THIS FREE BOOK ▶
"The Truth about all Belt Dressings"

CLING-SURFACE CO. 1062 NIAGARA STREET BUFFALO 13, NEW YORK
CLING-SURFACE CO. OF CANADA, LIMITED, TORONTO, ONTARIO

If you write maker identify as IEN - 6607

VALVE . . Pressure vacuum unit to protect volatile liquid tanks

Source: JOHNSTON & JENNINGS CO.
6915-19 Bessemer Ave., Cleveland 27 Ohio



Vapor-Tite Conservation Regulator

Vapor loss is minimized and storage tanks, handling volatile liquids, are protected against excessive pressure or vacuum by this new Type V-130 Hi-Flo valve. It combines pressure and vacuum valves in a single hood covered assembly. It is characterized by the Buna-N membranes in each valve to ride on aluminum seating rings with 1/64-in. edges and sharply sloped sides.

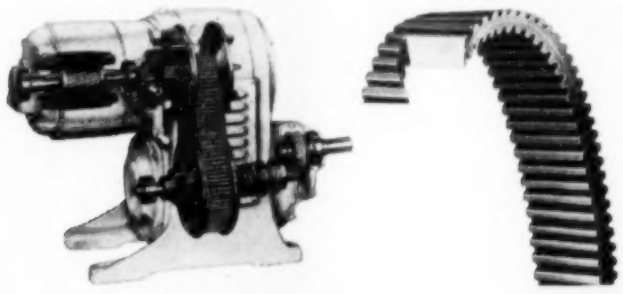
The membranes are pressure balanced, top and bottom, for positive leak-proof closure until either the designed pressure or vacuum is exceeded. Then one or the other valve opens to vent the tank.

Four sizes are 6 to 12 in. at the 150-lb. mounting flange. Diameter of the aluminum hood is about 20 to 38½ inches. Effective pressure area is 54.70 to 220.35 square inches. Effective vacuum area is 69.30 to 250.80 square inches. The membranes are assembled in aluminum valve caps in an arrangement that permits replacement without tools.

If you write maker identify as IEN - 6608

DRIVE . . Variable speed unit, ac. motor and V-belt transmission

Source: U. S. ELECTRICAL MOTORS INC.
Box 2058-A, Terminal Annex, Los Angeles 54, Calif.



Details in Vari-Drive Bulletin

New V-belt, double ribbed design, is now available for the company's motor driven variable speed transmission in capacities ranging from 5 to 50 hp. The complete drive assembly is similar to the unit previously described IEN-12920-52. The new belt minimizes internal friction and has excellent flexibility without sacrificing strength.

Construction employs a synthetic fiber in built-up layers cured under pressure in molds. The resulting belt is resistant to attack by heat, oil and grease.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6609

SHORT RUN STAMPINGS

DESCRIBED IN NEW CATALOG No. 718

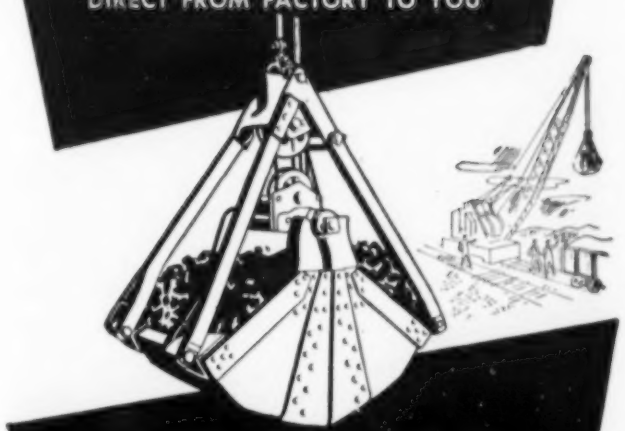
New catalog describes HPL's "know-how" which can save up to 80% of conventional tooling costs.

Facilities for producing stampings in runs of 25 to 25,000 pieces in various shapes and materials are described and shown. HPL is making this attractive four-page catalog available to production, purchasing and management personnel to assist them with their stamping problems. Catalog No. 718 will be sent to you upon receipt of publication or letterhead request.

HPL Manufacturing Co.
15175 MILES AVENUE • CLEVELAND 28, OHIO

If you write maker identify as IEN - 6610

BROWNHOIST BUILDS BETTER BUCKETS
— for less money
DIRECT FROM FACTORY TO YOU



ROPE-REEVE, POWER WHEEL AND LINK TYPE

Write for illustrated catalogue

INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN

146

If you write maker identify as IEN - 6611

modernize materials handling with

CARGOTAINERS

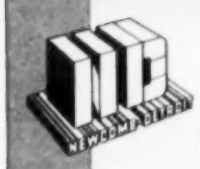
Cargotainers are designed to keep pace with modern methods of materials-handling because they are: 1. Sturdy and resistant to shock; 2. Readily folded when not in use; 3. Open mesh so that contents may easily be seen for quick inventory; 4. Efficiently designed for shipment, assembly line use, and vertical storage. Write for information concerning the new CLEARVIEW model with its exclusive base construction for greater durability and better locking and stacking. Dept. IEN, Pittsburgh Steel Products Co., Grant Bldg., Pittsburgh 30, Pa.

Pittsburgh Steel Products Company
A Subsidiary of Pittsburgh Steel Company

If you write maker identify as IEN - 6612

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF



INDUSTRIAL OVENS
•
SPRAY BOOTHS
•
PARTS WASHERS
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DUST COLLECTORS
•
HEAT and AIR SYSTEMS

ESTABLISHED 1912
- DETROIT DIVISION
- GRAND RAPIDS DIVISION
- NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call —
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as IEN - 6613

Here's an interesting and varied collection of fastener problems, which were solved by sound application of self-locking ELASTIC STOP nuts or the new Rollpin fastener. Some of these 28 cases may suggest answers to some design problems of yours. Or perhaps you'll just enjoy reading how other engineers resolved their difficulties.

Write for your free copy of this booklet of ideas. And if you have ideas or problems of your own, remember that ESNA has the broadest line of standard and special self-locking fasteners . . . and a staff of experienced engineers ready to help you. Address Dept. N39—653.

ELASTIC STOP NUT CORPORATION OF AMERICA
2330 Vauxhall Road, Union, N. J.

DESIGN HEADQUARTERS FOR SELF-LOCKING FASTENERS

If you write maker identify as IEN - 6614

If you write maker identify as IEN - 6615

Revolving turntable allows the operator to work all around the casting without stop for re-positioning . . . an addition to the standard Wolverine rectangular benches — Provides: • Better dust collection due to higher velocity. • New design, permitting exhaust outdoors where required, or return to room if desired. • Standard velocity, 300 feet per minute, and, if application requires, higher velocities available up to 800 feet per minute. • Ideal system for collecting dust from grinding, polishing and sanding operations.

Heavy duty industrial viscous filters in rear compartment remove dust from air stream and axial flow fan in top of rear compartment discharges vertically back into the room or outdoors if required.

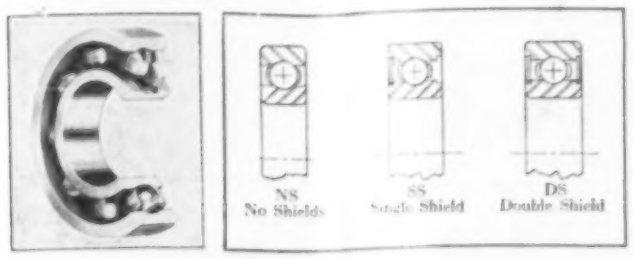
Write for descriptive bulletin, Dept. D

WOLVERINE EQUIPMENT CO.
31 MAIN ST., CAMBRIDGE 42, MASS.

If you write maker identify as IEN - 6616

BEARING . . Single row ball suited for radial and thrust loading

Source: NICE BALL BEARING CO.
2940-44 Hunting Park Ave., Philadelphia 40, Pa.



Line and prices in Catalog 150

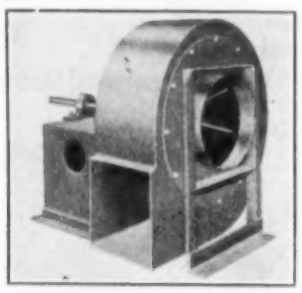
Series C is a new single-row retainer type bearing. It is made in inch dimensions that correspond to established light-duty inch standard bearing sizes. Ground and polished raceways are assembled with chrome alloy balls to handle radial, thrust or combined radial and thrust loading. The bearing can be supplied plain, with one shield or with double shielding, the latter grease packed as standard.

Sizes range from ¼ to 1⅜ in. in bore, ⅝ to 2½ in. in outside diameter, 0.1969 to $\frac{7}{16}$ in. in width for the plain design and 0.1969 to $\frac{9}{16}$ in. in the single or double-shield design. Ball sizes are 3/32 to $\frac{5}{16}$ inch. Radial load capacity is 30 to 330 lb. at maximum recommended speed of 5,000 rpm. Limited thrust loading is 32 to 480 pounds.

If you write maker identify as IEN - 6617

VENTILATING . . Centrifugal blower for exhaust duty, 20 to 80 in. sizes

Source: DEPENDABLE MACHINE CO.
2500 High Point Road, Greensboro, N. C.



Ask for specifications

Two designs employ standard and slow speed rotors in the company's new line of centrifugal exhaust blowers. Each is mounted on a ball bearing shaft in a housing with outboard side inlet. Eleven sizes, in the standard design, rate 1,325 to 17,800 cfm. based on 3,000 fpm. air velocity and 1,920 to 630 rpm. Corresponding input is 2 to 25 hp. Inlet diameter is 9 to 33 inches.

The slow speed line has 8 sizes ranging from 35 to 80 in. in rotor diameter and 15 to 33 in. inlet diameter. These units range from 3,690 to 17,800 cfm. at 1,185 to 475 rpm. based on 3,000 fpm. velocity. Input is 7½ to 20 hp. The housing is designed for delivery in any desired direction and either right hand or left hand arrangement. Both blower designs are suited particularly for use in woodworking plants to handle sawdust, shavings, chips, dust and wood scrap.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Looking for a product?
Try the index on page 1

If you write maker identify as IEN - 6618

OVERLOAD RELEASE CLUTCH WORKS *Instantaneously!*

- Instantaneous trigger action
- Works consistently within very close limits
- Your machine will resume operation at exact cycle point of release
- A safety device of universal, industrial application, easily installed on sprocket, chain, belt or gear drives
- Can be used over a wide range of speeds and shaft sizes

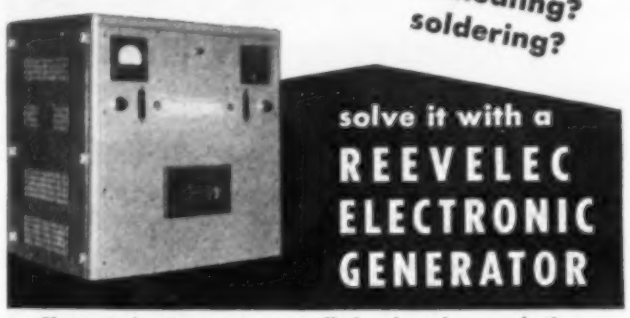
Catalog on Request

Overload Release Clutch Co., Inc. 1164 Stuyvesant Ave. Irvington, N. J.

If you write maker identify as IEN - 6619

what's your metal heating PROBLEM?

hardening?
brazing?
annealing?
soldering?



Electronic heating equipment will sharply reduce production time and virtually eliminate rejects.

The unit shown here will anneal an auto clock spring in ¾ seconds; weld .020 nichrome wire in 1.5 seconds; silver braze two watch case lugs in 35 seconds.

Operated by unskilled labor, it has automatic time cycle control, automatic breakers in AC and high voltage circuits, current matching transformer and many other important features.

Occupies only 16" x 21" of bench space.

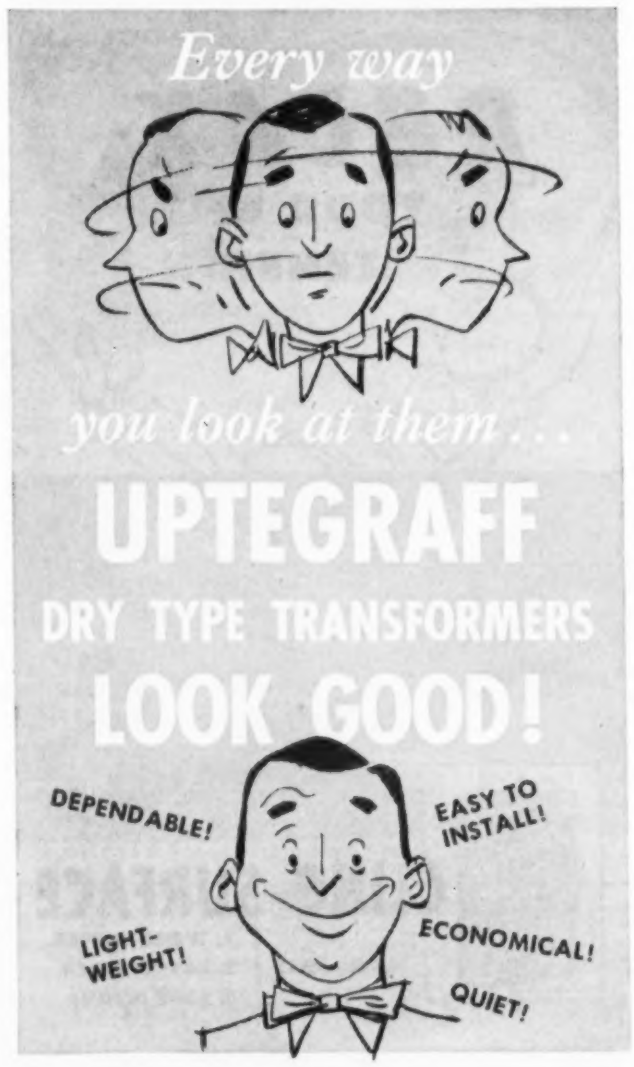
Cost is amazingly low . . . write now for complete details.

●

Reevelec Generators are available in all sizes up to 200KW. Extremely flexible, they can be adapted to many production processes by a simple tooling change. Our engineers will help you determine the model best suited to your needs.

REEVE ELECTRONICS, INC. 613 W. LAKE ST. CHICAGO 6, ILL.

If you write maker identify as IEN - 6620



Sizes 0.1 KVA to 2,000 KVA

Left—Type E Specialty Transformer, for cabinet or indoor service. Ratings—0.1 to 10.0 KVA.

Right—25 KVA Uptegraff Dry Type Distribution Transformer.

Left—Open-coil transformer, type F, for indoor service. Ratings—0.1 to 15 KVA.

Right—Uptegraff type DP air-cooled Power Transformer. Made in ratings up to 2000 KVA, 14,400 volts.

Write for complete information

R. E. Uptegraff Manufacturing Co.
Scottdale, Pennsylvania
Makers of POWER · DISTRIBUTION · INSTRUMENT · SPECIALTY TRANSFORMERS

If you write maker identify as IEN - 6622

NEW Corrosion-Resistant

Speedline fittings

LOWER PIPING COSTS result when you use *Speedline* fittings, because you can use lightweight Schedule 5 pipe. Increased ID of Schedule 5 pipe gives lines increased capacity.

RAPID INSTALLATION is possible because the *Speedline* method often eliminates the need for welding or flaring.

Write for your copy of this 20-page *Speedline* catalog. It gives you the entire story.

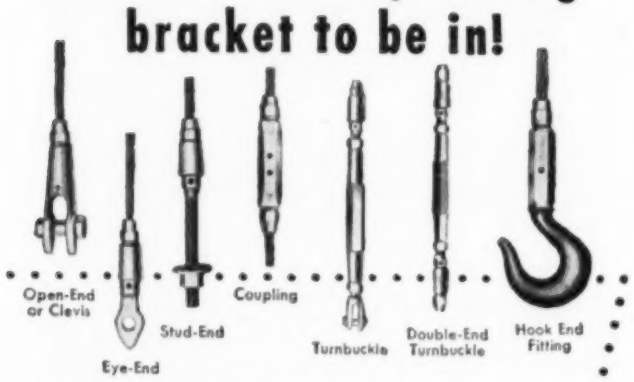
Speedline distributors are located in principal cities from coast to coast.

HORACE T. POTTS CO. *Since 1815*

534 E. Erie Avenue, Philadelphia 34, Pa.

If you write maker identify as IEN - 6623

An ideal money-saving bracket to be in!



- Electroline Wire Rope Fittings offer these important advantages:
- Installation time: only a few minutes . . . and by ordinary labor working with ordinary tools.
- Longer life for wire-rope by damping vibration stresses and overcoming rope fatigue at the entrance of the fitting . . . where rope-weakening often occurs.
- Cut re-roping costs . . . use these fittings over and over again.
- Electroline Wire Rope Fittings are safe, economical, permanent. Obviously, they're a good investment.

Get the whole story in our catalog—glad to send you one.

Electroline Company

4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

If you write maker identify as IEN - 6624

AREA METERS

PENN

Electric or Electronic LINAMETER

PENN Mechanical LINAMETER

For corrosive fluids, viscous liquids, pulps, and slurries, for pulsating flows, inadequate straight run of pipe, small flows and wide range of flows.

WRITE FOR NEW CATALOG 650
Contains capacity tables, installation diagrams, other useful flow data.

More than 40 Years' Experience . . . more than 10,000 Installations

PENN INDUSTRIAL INSTRUMENT CORP.
PENN Bldg., 4110 HAVERFORD AVE.
PHILADELPHIA 4, PENNA.

If you write maker identify as IEN - 6625

TIMING . . Motor driven counter accumulates hours on closed circuit

Source: MARION ELECTRICAL INSTRUMENT CO.
403 Canal St., Manchester, N. H.

Records action

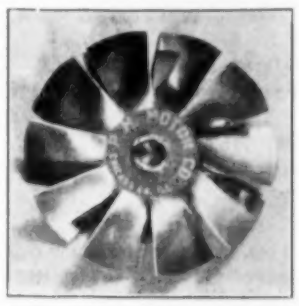
Type HM2ET is a new hermetically sealed assembly of the company's elapsed time counter in a 2½-in. housing. The synchronous motor operates on 110 or 220-volt 50 or 60 cycle ac, to specification. It drives a counter reading in hours and tenths to 9,999.9 or in hour divisions to 99,999.

The motor circuit connects into the circuit leading to motor driven equipment to accumulate the total hours on closed circuit or the time during which the equipment is in operation. The drawn steel housing magnetically shields the unit. Operation can be maintained satisfactorily between minus 55 deg. and plus 85 deg. C.

If you write maker identify as IEN - 6626

VENTILATING . . Small fan blades, 2 to 3 in., 18 to 85 cfm., 3,600 rpm.

Source: PM MOTOR CO.
4814-18 W. Monroe St., Chicago 44, Ill.



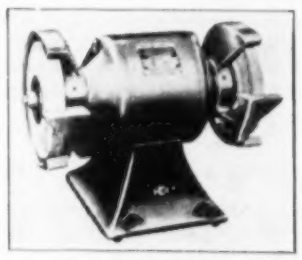
Sample on request

Aluminum or steel can be specified in this new line of formed fan blades. Metal thickness is to 0.05 inch. Standard pitch is ⅝ inch. Sizes range from 2 to 3 in. in either of two designs. One is equipped with a riveted hub. The other omits the hub. The center hole ranges from ⅛ to $\frac{9}{16}$ in. in diameter. The finished units can be supplied plain, plated, or anodized.

If you write maker identify as IEN - 6627

GRINDING . . Bench type machine, four sizes for 6 to 10 inch wheels

Source: PORTER-CABLE MACHINE CO.
10-14 Exchange St., Syracuse 8, N. Y.



$41 to $135

Ball bearing totally enclosed motor, rating ¼ to 1 hp., is employed in this new line of bench type grinding machines. Each mounts two grinding wheels on its extended shafts. Tool rests and wheel guards are included. The largest machine operates at 1,725 rpm., the others at 3,450 rpm. Each is equipped with coarse and fine grit wheels. Control centers at a toggle switch on the base. All but the smallest unit include end shields, built-in exhaust outlets, spark arrestors.

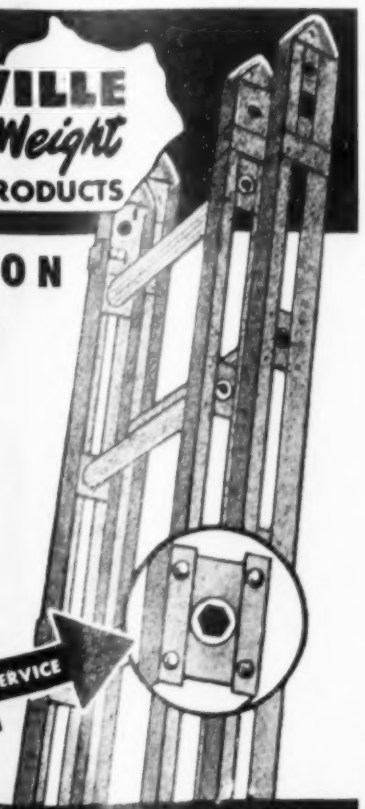
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6628

LOUISVILLE Safe-Weight ALUMINUM PRODUCTS

EXTENSION LADDERS

TWO-SECTION
AND THREE-SECTION
ALSO —
EXTENSION TRESTLES
ROLLING SCAFFOLDS
SAFETY PLATFORMS
SCAFFOLD PLANK
SWING STAGES
STRAIGHTS
A-JACKS
STEPS

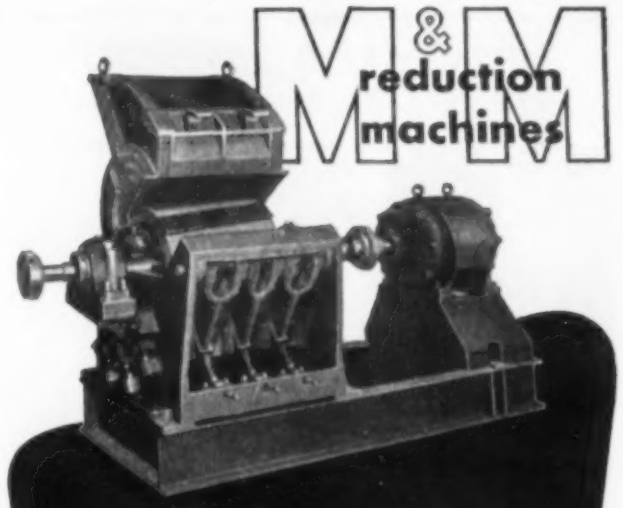


DESIGNED FOR SAFETY
BUILT FOR SERVICE
RIVETED FOR STRENGTH

WRITE US — SEE YOUR DEALER
LOUISVILLE LADDER COMPANY
1101 W. OAK ST. · DEPT. JA · LOUISVILLE 10, KY.

If you write maker identify as IEN - 6629

M&M reduction machines



M & M Reduction Machines are rapidly gaining favor in industry for converting waste to uniform size for easy handling and in many cases into valuable by-products. Cut your disposal costs with an M & M Reduction Machine. Send us your problems.

MITTS & MERRILL
1014 South Water • SAGINAW, MICHIGAN

If you write maker identify as IEN - 6630

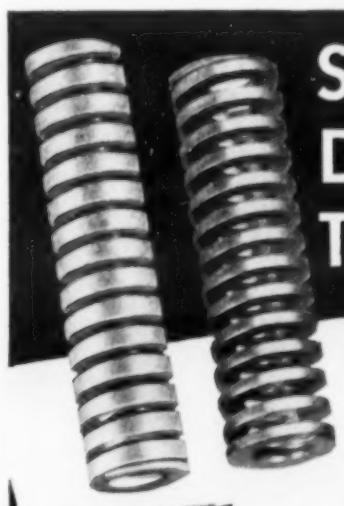
PROFITABLE manpower

Take the shovel out of a man's hand and put him on the seat of a "PAYLOADER" tractor-shovel. Then step back and watch your bulk materials *really* move—faster and cheaper. In hundreds of plants and yards "PAYLOADERS" pay for themselves in a few months by cutting time and labor costs and boosting production. They work indoors and outdoors — unload box cars — dig, carry, load, dump, lift, pull and push. Seven sizes available from 12 cu. ft. to 1½ cu. yd. Consult your Hough Distributor or write The Frank G. Hough Co., 841 Sunnyside Ave., Libertyville, Illinois.

PAYLOADER®
THE FRANK G. HOUGH CO. · Since 1920

If you write maker identify as IEN - 6631

SAVE DESIGN TIME!*



Danly Die Springs give you a double range of sizes

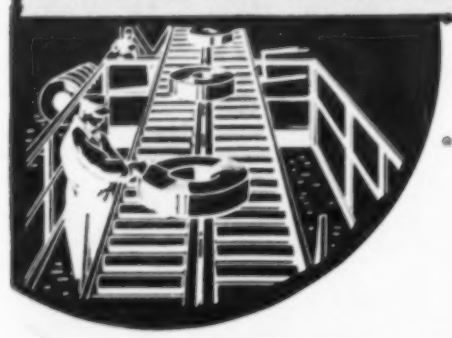
Two complete pressure and deflection ranges permit quick selection of springs that meet your needs exactly . . . eliminate redesign or compromise on oversize or undersize springs. Write for your Danly Die Spring Bulletin now!

*Yours Free!
Send for this FREE Die Spring Bulletin today!

DANLY
DANLY MACHINE SPECIALTIES, INC.
2100 South Laramie Avenue, Chicago 50, Illinois

If you write maker identify as IEN - 6632

BUYING CHAIN CONVEYERS? BETTER SEE *Mathews First!*



● Nearly *50 years* of experience and design have gone into the *Mathews Chain Conveyer* systems. From the first light dairy conveyers to heavy-duty steel mill systems, the *Mathews* line is complete. With chain conveyers, you'll find that you get more for your money when you buy *Mathews*.

MATHEWS CONVEYERS

GENERAL OFFICES: *Mathews Conveyer Company, Ellwood City, Pennsylvania*
PACIFIC COAST DIV.: *Mathews Conveyer Co. West Coast, San Carlos, Calif.*
CANADIAN DIVISION: *Mathews Conveyer Company, Ltd., Port Hope, Ontario*

If you write maker identify as IEN - 6633

END CAPS FOR CONDENSERS ... HERMASEAL OFFERS THREE SIZES TO FIT MOST NEEDS

When you need End Caps for Condensers that must meet *high quality* standards . . . yet cost is a factor . . . and, you need them in a *hurry* . . . call on Hermaseal!

HERMASEAL – is a top specialist in Sealed Terminals, Sealed Headers, and allied parts for the radio-electronics industry.

COMPLETE CATALOG – Just off the press, a new catalog with descriptions and specifications for most of Hermaseal's stock Terminals and Headers. Write for your copy today! And let us quote you on your End Cap requirements. No obligation, of course.

THE HERMASEAL CO., Inc.
Elkhart 25, Indiana

If you write maker identify as IEN - 6634

Chip Away... PAINT RUST SCALE

with **AURAND CLEANING TOOLS**

Clean off accumulations of scale, paint, rust or any foreign matter from any hard surface with Aurand Cleaning Tools. Toothed cutting wheels, loose pinioned on rotating head chip away accumulations at high speed. Positive depth shoe prevents cutting into permanent surface and assures uniform cleaning of entire area.

Two sizes in electric or pneumatic models.

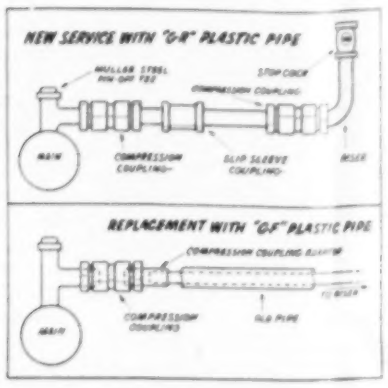
FOR FULL DETAILS, WRITE DEPT. 649

AURAND MFG. & EQUIP. CO.
2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 6635

PIPE . . Rigid and flexible plastic and fittings for gas service lines

Source: CARLON PRODUCTS CORP.
10225 Meech Ave., Cleveland 5, Ohio



To replace metal

Type GR rigid, and Type GF flexible, are new plastic pipes for installation of new gas service lines and for replacement of old ones. Both types are guaranteed against attack by corrosion. Weight is about ⅛ that of steel pipe. Type GR rates 3,600 lb. per square inch and is suited for use in any climate. It is available in 20 ft. sections that can be cut with a hand saw or pipe cutter. The sections are connected by compression couplings or cemented type couplings, as well as by the company's plastic compression coupling.

Type GF is supplied in coils to 250 ft. in length. This pipe can be pulled through old corroded lines. It is connected to a service tee by means of a compression coupling and to a riser by a plastic adapter and compression coupling.

If you write maker identify as IEN - 6636

PROTECTING . . Vinyon-N coat is immune to attack by acids, alkalis

Source: FILTRATION ENGINEERS INC.
153-57 Oraton St., Newark 4, N. J.

Launders easily

Feon Lab Coat is a new companion unit to the coverall previously described IEN-5441-53. It also is made of Vinyon-N fabric, a tough, strong, cool material that will not show dirt readily. It is immune to attack by bacteria and mildew. It is assembled with thread of the same chemically resistant Feon fiber.

The coat can be laundered and then steam pressed or ironed, but it usually requires no pressing. There are two breast pockets, two reinforced side pockets, a pencil pocket, slots for access to inner pockets and fly front with buttons. Strain points are bar tacked.

Identify as IEN - 6637

Tempil Corporation has found a new use for its Tempilstik, temperature indicating crayon. It is being used to make marks on the surface of Decorative Formica that is to be heated for forming under a radiant electric heater. By checking the seconds required to melt the chalk mark in various positions it is possible to tell when the heater is operating uniformly and thus is ready for production use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6638

FREE Send for your copy today

Helps you choose the RIGHT Hood Glove — *Neoprene, Rubber or Plastic* for ANY Industrial job

Check this Reliable, Handy Hood Performance Chart!

. . . this information-packed booklet shows comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic Coated Gloves, and contains illustrations and full descriptions of the complete line of Hood Industrial Gloves — top choice for *every* job in *any* industry.

HOOD RUBBER CO.
Watertown, Mass.

If you write maker identify as IEN - 6639

Yes! THRIFTMASTER makes *ALL TYPES* of DRILLHEADS

Universal Joint Drillhead . . . Full Ball or Bronze Bearing Construction Standard and Heavy Duty. From ½" Minimum Centers up. Capacities to 1" in Steel.

Gear Driven Electric Type Adjustable Drill Head . . . Enclosed, Full Ball Bearing Construction.

Special Fixed Center Drillhead . . . Full Ball Bearing Construction.

- **We Stock or Can Build the Right Drillhead for Your Job.**
- **Write for THRIFTMASTER Complete Catalog or phone for a rush, on-the-spot, quote.**

Subsidiary of
Thomson Industries, Inc.

THRIFTMASTER *Products Corporation*

1040 N. Plum Street
LANCASTER, PENNA.

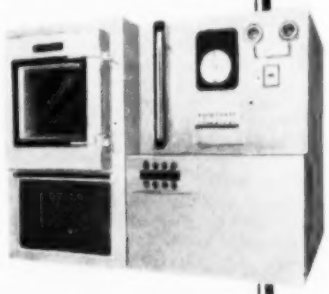
Also makers of
DORMAN AUTOMATIC REVERSE TAPPERS

If you write maker identify as IEN - 6640

temperatures! atmospheres! pressures! For ACCURACY TEST WITH *Tenney*

. . . for Tenney Test Chambers are precision-engineered for maximum efficiency and can be designed to simulate the complete range of temperature, atmospheric or pressure conditions found anywhere on earth—or above it to altitudes of 120,000 ft. plus! They attain sub-zero temperatures quickly, maintain them efficiently and provide full instrumentation for accurate evaluation of complete test data.

TENNEYZPHERE ALTITUDE CHAMBERS

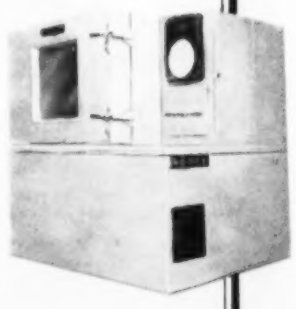


Designed to withstand atmospheric pressure and to simulate global conditions of pressures, temperatures and humidities. Altitudes from sea level to approx. 80,000 ft. Temperature range from plus 200°F to minus 100°F. Also simulates desired (20% to 95%) relative humidity.

TENNEY SERVO UNIT

Portable air conditioning unit which may easily be attached to various types of laboratory enclosures—impact machines; tension machines; torsion testers; cold boxes and similar equipment. Through its use, articles undergoing testing, aging or weathering can be subjected to wide variations of humidity, heat and cold. Photo shows servo attached to companion chamber.

TENNEY TEMPERATURE AND HUMIDITY CHAMBER



Designed for positive control of temperature, humidity and air circulation. Permits the accurate checking of physical quality, fragility, tension and other factors. Also built to incorporate extreme low temperatures, to —100°F.

TENNEY SUB-ARCTIC INDUSTRIAL CABINETS

Designed for low-temperature testing of metals, radios, instruments, plastics, liquids, chemicals and pharmaceuticals. Temperature ranges of —40°F, —60°F, —95°F and —150°F are standard for each size.

For further information on these and other Tenney test equipment, write to Tenney Engineering, Inc., Dept. C, 26 Ave. B, Newark 5, N. J.
Los Angeles Representative: GEORGE THORSON & CO.

Tenney
ENGINEERING, INCORPORATED
Engineers and Manufacturers of Automatic Environmental Test Equipment

If you write maker identify as IEN - 6642

WICKWIRE ROPE SLINGS

tough...strong...extra flexible

Wickwire Rope Slings are offered in both braided and conventional types . . . are designed to hitch on to heaviest loads with utmost safety, ease of handling and absolute security of attachments. Where extreme flexibility is required, Wickwire Slings of braided design give definite advantages in non-kinking qualities and in their ability to handle materials of all types and shapes without taking a permanent set.

Let us know your requirements. Our engineers will be pleased to analyze your sling problems and recommend the correct solution.

THE COLORADO FUEL AND IRON CORPORATION – Abilene (Tex.)
Denver • Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
THE CALIFORNIA WIRE CLOTH CORPORATION – Los Angeles
Oakland • Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION–Boston • Buffalo • Chattanooga
Chicago • Detroit • Emlenton (Pa.) • New York • Philadelphia

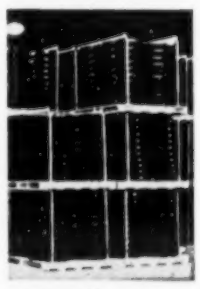
WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 6643

NOW make your PALLETS tiering PALLETS by adding PALTIER HARDWARE

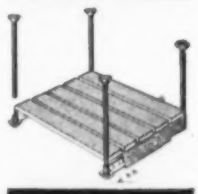
The all purpose tiering Hardware

PALTEAM for HEAVY STORAGE



PALTEAM is a pair of tiering horses which may be assembled to any standard 3-stringer pallet. Designed for flexibility, the posts slip-fit into the socket assembly which is permanently secured to the pallet. The cross bars slip-fit over the top of the posts. Vertical openings between pallets may be changed by simply changing posts length.

CLER-DECK for MEDIUM STORAGE



CLER-DEK is designed primarily to give user full use of pallet deck. Post and cone assembly is same as the PALTIER. Can be attached to most any pallet. Slip-fit posts and self aligning cones make for quick, sure safe stacking of loads.

ECONO-MIZER for LIGHT STORAGE

Low-priced tiering hardware of high quality for use where vertical opening does not exceed 36" and loads are not over 1500 lbs. Made with the same precision and high quality materials as other PALTIER products.

SHELVING HARDWARE

This new type Shelving Hardware can be furnished for average loads and when completely assembled, provides a very stable rack. Can be set up easily or knocked down and compactly stored or moved. Shelving Hardware attached to your own pallets provides cheaper and better shelving.

FOR ADDITIONAL INFORMATION SEND FOR **FREE CATALOG**

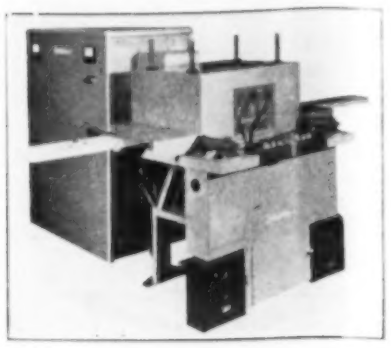
Designers, Engineers, and Manufacturers of Flexible, Efficient, and Economical Storage Systems for every use and application.

THE PALTIER CORP.
1711 KENTUCKY STREET, MICHIGAN CITY, INDIANA
DISTRIBUTORS IN PRINCIPAL CITIES

If you write maker identify as IEN - 6645

DRYING . . Scarfing press with electronic high frequency heat

Source: REEVE ELECTRONICS INC.
613 W. Lake St., Chicago 6, Ill.



For roof trusses

Gluing cycles for pine and similar woods range from one to two minutes in this new electronic timber scarfing press. It takes work to 16 in. in width and 3 in. in thickness. It is equipped with motor controls for infeed and outfeed conveyor drive.

Pressure is applied by air. Power input, to the high-frequency generator, is 10 kva. on 220 or 440 volt single-phase ac. at 90 per cent power factor. The equipment is shielded electrically and is certified to conform with FCC regulations. Floor space measures 85 by 53 inches.

If you write maker identify as IEN - 6646

PAINTING . . Liquid resin for surfaces of concrete, metal, wood

Source: EARL PAINT CORP.
238-42 Genesee St., Utica 2, N. Y.

Particularly for plant application

Erkopon trade names a new surface protecting paint. It employs Epon resins to combine with a curing reactor that rapidly converts an applied film, after the thinner has evaporated, into a hard tough protective coating. The new material is available for both air drying and baking and for application by brush, spray, or trowel in one consistency that is included in the line for mild acid service in trenches. Application can be made on surfaces fairly clean but cleanliness is not a critical factor. The cured film will withstand temperatures to 200 deg. F. without softening.

If you write maker identify as IEN - 6647

GAGE . . Double end plug design with handle and interchangeable plugs

Source: SIZE CONTROL CO.
2508 W. Washington Blvd., Chicago 12, Ill.

Plugs adjust to length

Universal designates a new anodized aluminum handle for the company's Reversible "go" and "no-go" plain and thread plug gages. The units are assembled in cabinet sets, each plug with an aluminum bushing to permit making various size combinations. Eight handles in a set will cover a range of plugs from 0.010 to 0.750 inch.

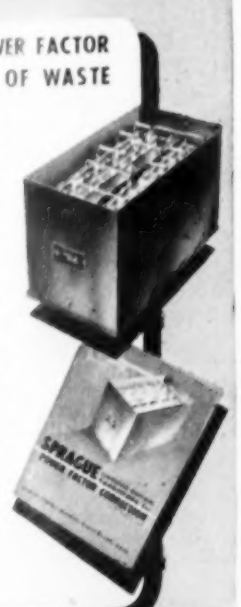
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6648

CUT COSTS AND CORNERS

BY CORRECTING LOW POWER FACTOR RIGHT AT THE SOURCE OF WASTE

Most inductive electrical equipment installed in a plant wastes money, money that *can be saved*. Some of it goes to supply non-productive magnetizing current. More of it goes to buy extra wiring, switches, and transformers to make up for this loss. Still more is wasted in reduced output through lost load. These wasted dollars can be saved by installing Sprague Power Factor Correction Capacitors at each piece of inductive electrical equipment. Write for free cost-saving guide, "Power Factor Correction" today.



SPRAGUE
Industrial Capacitor Div.
SPRAGUE ELECTRIC COMPANY
165 MARSHALL STREET
NORTH ADAMS, MASS.

If you write maker identify as IEN - 6649

VALUABLE

Condensed Technical Data on Microstructure, Critical Points, Effect of Alloy Elements, Forging, Machining, Welding, Thermal Treatment of . . .

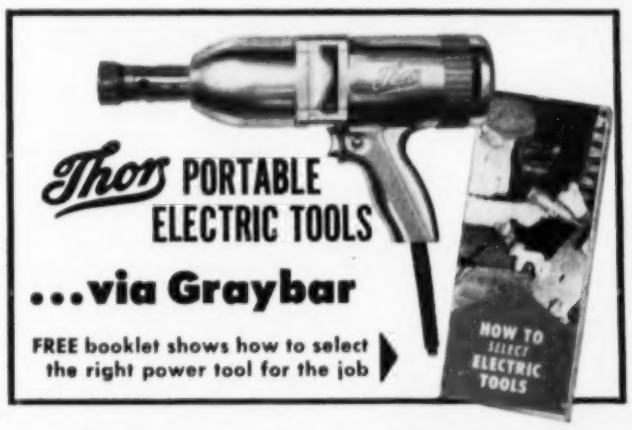
B & W ALLOY STEEL TUBING FOR MECHANICAL USES

Medium-Carbon Grades • Technical Data Card 141
Low-Carbon Grades • Technical Data Card 149

TA—1745 (LM) WRITE TODAY!

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

If you write maker identify as IEN - 6650



Thor PORTABLE ELECTRIC TOOLS ...via Graybar

FREE booklet shows how to select the right power tool for the job

Learn how to get the most for your money when you invest in power tools. Send for this helpful selection guide to the Graybar-distributed line of Thor drills, impact wrenches, screwdrivers, hammers, saws, and sanders. Outlining the tools best-fitted for specific jobs, the booklet also points up important tool construction features that mean longer life and increased efficiency.

Thor tools are furnished for either 115 volt AC or DC — with 220 and special voltages available if specified. Ready interchangeability of all Thor parts allows faster, more economical service for tool users.

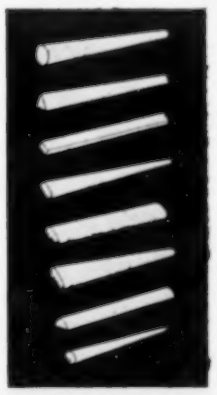
For complete information, call your near-by Graybar Representative. *Graybar Electric Co., Inc. General Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 323-120

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as IEN - 6651

You can't beat 'em for close work!

INDIA® OILSTONE FILES



Master machinists, tool and die makers rely on INDIA Oilstone Files to get them out of "close" spots. For the utmost in precision filing and honing calling for the closest tolerances, these files can't be matched. Perfect for radiusing, deburring, chamfering and edge breaking. Choice of Coarse, Medium, and Fine grits; 35 shapes and 97 sizes to choose from. Ask your distributor for them.

FOR HANDY REFERENCE
Catalog #19 describes, illustrates entire line. Address Behr-Manning Corp., Troy, N. Y., Dept. IEN-6.

BEHR-MANNING
A division of NORTON Company
▲COATED ABRASIVES ▲SHARPENING STONES ▲PRESSURE-SENSITIVE TAPES

If you write maker identify as IEN - 6652

HOBBS

EST. 1883

TANGLE-PROOF LOCK WASHERS

You can *depend* on Hobbs spring lock washers to meet all job requirements and government specifications. Available in high carbon steel, stainless steels, silicon and phosphor bronze, and all types of platings.

HOBBS COTTER PINS are available in steel, brass, stainless steel, and monel in extended prong (Loxit) and hammer-lock (HobLok) types. HobLok cotter pins lock themselves when hit with hammer!

Write now for Hobbs lock washer and cotter pin price lists!

HOBBS MANUFACTURING CO.
Fastener Division
40 SALISBURY ST., WORCESTER 5, MASS.

If you write maker identify as IEN - 6653

FLEXAUST* HOSE CUTS COST 5 WAYS

Highly Flexible Airtight Ducting
. . . For Moving Air, Gases, Materials
Via Pressure, Suction, Gravity

NEW CATALOG No. 35 SHOWS HOW FLEXAUST HOSE:

- **Saves labor** because Flexaust hose bends sharply without kinking or flattening, is easy to install.
- **Assures long life** with its excellent resistance to moisture, acids, abrasion.
- **Gives trouble-free service** because of its spiral-wire reinforced, double-ply construction and Neoprene coating.
- **Has many applications** in virtually every industry.
- **Custom-made accessories** are produced for unusual or special applications.

*Trade-mark

Sizes: 1¼" ID to 28" ID
Varied types, coatings and fittings

Write for your free copy.

AMERICAN VENTILATING HOSE CO.
Dept. IE6 • 100 Park Avenue
NEW YORK 17, N. Y.

If you write maker identify as IEN - 6654

Viking

• THE ORIGINAL COMPOUND SHEAR

CUTS WITHOUT KINKING
- Band Iron
- 1/4" Brass (any width)
- Copper, Sheet Iron Tin, Band Saws (any thickness or width)
- 12 Gauge Bessemer Steel

AS EASILY AS A TAILOR'S SHEARS THRU CLOTH

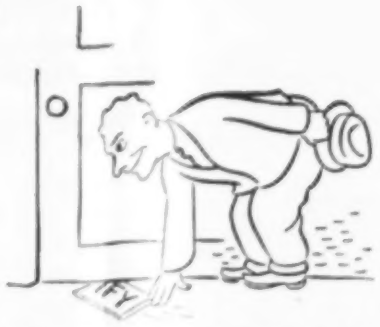
Applies the strength of **20 MEN** *at the blade*

• Viking, the original compound lever shear will cut straight, angle or circle without kinking metal. Removable, adjustable, cutting blades are of specially tempered ground alloy steel. They hold a keen edge for a long time.

IMMEDIATE DELIVERY $29

VIKING SHEAR COMPANY
1065 WEST 20th STREET • ERIE, PENNSYLVANIA

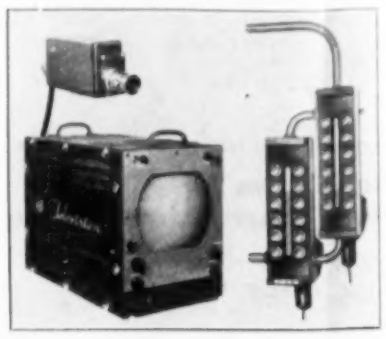
IDEAS FOR YOU



Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

Identify as IEN - 6655

Television now applies to bring boiler water gage readings down to the operator's panel in the big boiler installations. Yarnall-Waring offers it in the form of an RCA camera and picture receiver for panel mounting. It applies particularly with the Yarnall-Waring flat glass gage. Operation is on a closed electronic circuit that does not interfere with standard television reception in nearby residential areas.

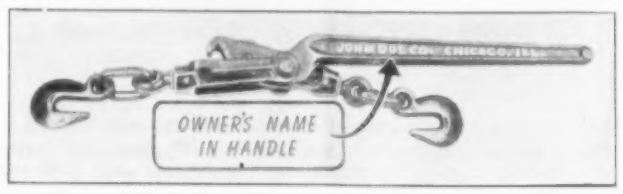


Identify as IEN - 6656

New tire looks like a domestic water heater or a soldier's full duffel bag. It is known as the Rolligon and applies under a vehicle that must travel over soft terrain like sand. It is driven by a series of rollers under the vehicle carriage. Air pressure is one and a half to five pounds. The vehicle can ride over a prone individual without harming him. It will "absorb" similar hard or soft obstructions as it rolls along . Goodyear Tire & Rubber Company makes it.

Identify as IEN - 6657

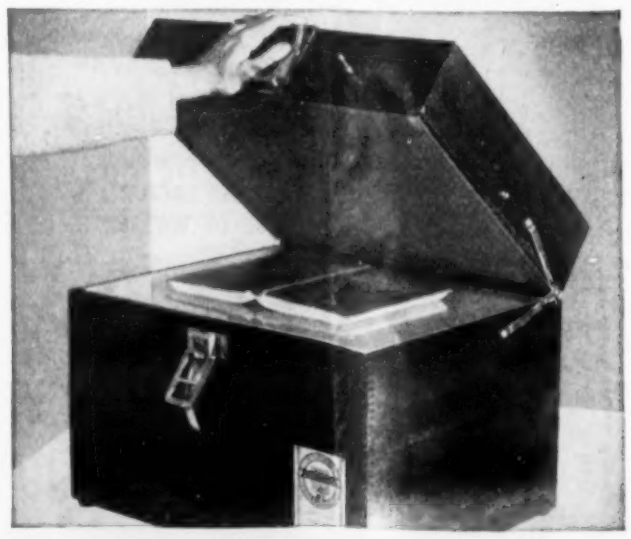
Your name can be made a permanent part of the load binders you purchase from Canton Manufacturing Company.



The name stops loss and theft to a marked degree. First order charge runs from 15 cents down to 3 cents per letter. A maximum of 40 letters and numerals can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6658



New Peerless Photocopy Printer with "Pneumatic Cushion"

Makes Books, Records and other Thick Material Easy to Copy

PEERLESS

Write for free brochure and full particulars

PEERLESS PHOTO PRODUCTS, INC., SHOREHAM, L. I., N. Y.

Distributors in: Los Angeles, Chicago, Cleveland, Detroit, Pittsburgh, Buffalo, Tulsa, Dallas, Houston, Salt Lake City, Atlanta

If you write maker identify as IEN - 6659

NEW

SWEEPS FAST, exceeding 100,000 sq. ft. per hr.

DUMPS MECHANICALLY in less than 24 seconds.

MORE MANEUVERABLE. Turns in only 60" radius.

PICKS UP bulky debris as well as dirt, dust.

...and built for YEARS of service!

Rugged NEW "Model 75" reverses instantly; is built for heavy duty work. Also in smaller models.

TENNANT

Model 75 Power Sweeper

Pays for itself in about 90 days . . . and is built for years of tough round-the-clock sweeping. Drives like a car; has exclusive instant reverse feature, automotive steering, mechanical dumping. Covers 48" path (with sidebrush). *Write for details!*

G. H. TENNANT CO.
2574 N. 2nd St., Minneapolis 11, Minn.

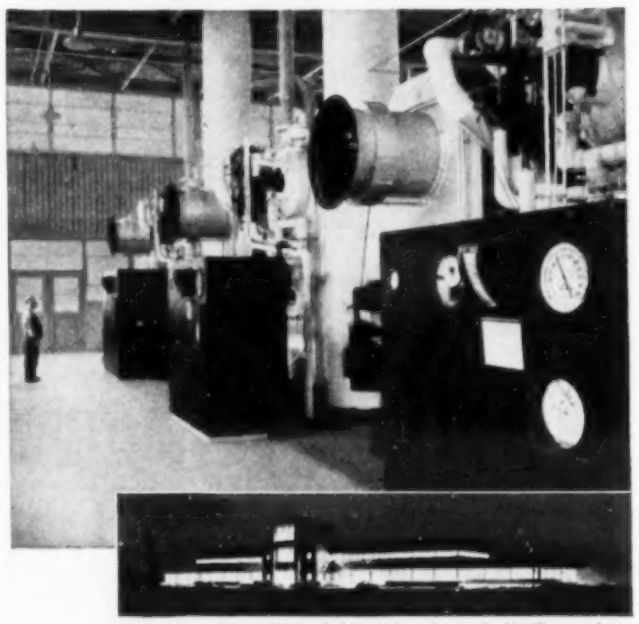
TENNANT Established 1870

INDUSTRIAL FLOOR MACHINES
OFFICES IN PRINCIPAL CITIES

If you write maker identify as IEN - 6660

keeping steam cheap . . .

with a multiple-unit installation at WHITE LABORATORIES, INC.



Night view of new White Laboratories plant—A. M. Kinney, Inc., Consulting Engineers, Cincinnati, Ohio.

Installation of 3 B&W Integral-furnace Boilers, Type FM, to serve the steam requirements of the large, modern plant of White Laboratories, Inc. at Kenilworth, N. J., is one more indication of the industry-wide acceptance trend now firmly established by these shop-assembled, B&W Units. Choice of this multiple-unit application of FM boilers instead of a single, larger unit, was decided on after careful consideration of all the factors involved in designing this new, expanded plant to provide a solution to White's continuing space problem. Each of these compact, versatile B&W Units is oil-fired by a B&W Y-Jet oil burner equipped with steam atomizer, and each is capable of producing 23,800 lb of steam per hr at pressures to 235 psi.

Combining the benefits of "package" steam with cost-saving big boiler advantages, B&W's Integral-Furnace Boiler, Type FM, has already been selected for a variety of companies covering more than 50 different industries as well as utilities and other users. B&W Units having a total steam capacity of more than 6½ million lb per hr are now in service or on order. Over half of this total capacity consists of multiple-unit installations. Available in standard sizes for loads ranging between 2900 and 28,000 lb per hr at steam pressures between 15 and 235 psi, this self-contained B&W steam generator is also obtainable for operation at higher pressures.

Send for Bulletin G-76 describing and illustrating the many cost-saving features of this popular boiler. The Babcock & Wilcox Company, Boiler Division, 161 East 42nd St., New York 17, N. Y.

BABCOCK & WILCOX

G-594

If you write maker identify as IEN - 6662

this new WELDING DESIGN MANUAL

FREE!

FOR THE ASKING

To assist you in your re-tooling problems . . . or to help you analyze your present welding methods so that you may enjoy maximum speed, efficiency, and economy in many of YOUR production problems...

Giant new 4th Edition contains 62 new photographs, 132 new drawings, 72 pages of helpful data covering basic and advanced welding techniques and designs used in fabricating and assembly. Profusely illustrated with application drawings; weld diagrams; tables of melting temperatures, strengths, corrosion factors; charts; alloy recommendations; etc. Convenient digest size.

This just-off-the-press book is "must" reading for anyone engaged in defense production and design, and will certainly be time profitably spent for any production man.

SEE . . . The unbelievable savings in metal-joining which can now be yours through the use of "Low Temperature Welding Alloys"® discovered a few years ago and now used in over 78,000 industrial plants throughout America for more efficient metal-working production as well as for salvaging irreplaceable tool and machine parts.

Over 100 different, new, EUTECTIC Low Temperature WELDING ALLOYS® and EUTECTOR® Fluxes are job-engineered for use on ALL metals—cast iron, alloy steels, aluminum, copper and nickel alloys, die castings, overlays, etc., and may be applied with ALL heating methods—torch, arc, furnace, induction heating, etc.

SEND FOR YOUR COPY TODAY!

EUTECTIC WELDING ALLOYS CORPORATION
172nd Street at Northern Boulevard • Flushing, New York, N. Y.

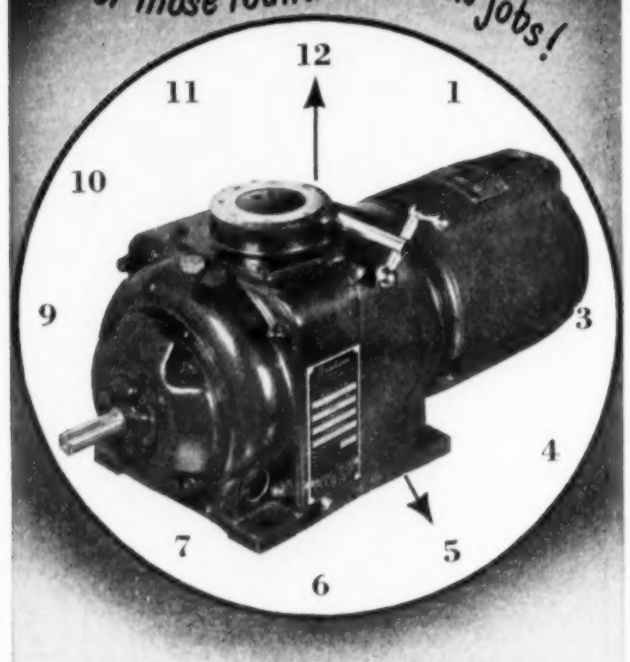
If you write maker identify as IEN - 6663

GET

Graham

variable speed drives

For those 'round the Clock jobs!



most for the money

because . . .

- **ULTIMATE in SIMPLICITY and COMPACTNESS** — only the Graham is a straight line extension of a standard induction motor — or available without motor.
- **UNLIMITED SPEED RANGE** — from any desired maximum speed to zero, including reverse if wanted without stopping motor.
- **UNMATCHED ACCURACY** — of speed setting and resetting and speed holding.
- **NO PERISHABLE PARTS** — such as belts or tubes, requiring periodic replacement.
- **PROVED PERFORMANCE** — Fifteen years satisfactory use as standard equipment.
- **LOW COST** — a better job for less money.

Prompt Delivery on Standard Models

GRAHAM TRANSMISSIONS, INC.
Dept. IEN, Menomonee Falls, Wis.

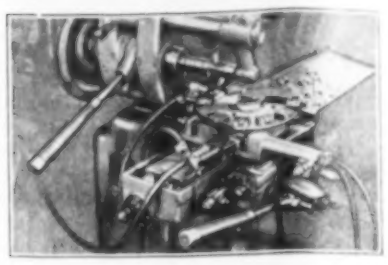
GET Graham
most reliable variable speed drive made

ENGINEERED and RATED for 'ROUND the CLOCK SERVICE

IDEAS FOR YOU—*Continued*

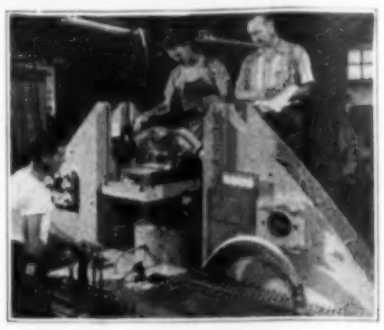
Identify as IEN - 6665

Slotting operation on small brass plugs is assisted by a semi-automatic installation of the Mead Specialties Company rotary work feeder. The feeder indexes the work by air pressure in step with manual movement of the machine table. A cam on the feeder hub ejects the finished pieces. The company will be happy to supply information on this and other uses.



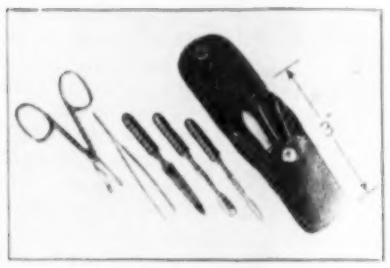
Identify as IEN - 6666

Hydraulic stretch-form press has been developed by Longren Aircraft Company and used with so many good results that the company has decided to manufacture a limited number for sale. It consists of a vertical power cylinder and laterally adjusted work holding clamps. It rates 100 ton. It will stretch form aluminum SW to 3 sq. in. in equivalent section and to 72 in. in width. Length capacity is 16 feet.



Identify as IEN - 6667

F. C. Wertheim, Sales Manager for Abbeon Supply Company, is "addicted to hangnails." He figured that he, and males like him, should have a little pocket manicure set, one he could put in his change pocket and not be accused of toting a "beauty shop." His tool making suppliers in Germany designed the set. He is now prepared to supply it to every male with hangnails or just a desire to look neat. $1.50 postpaid.



Identify as IEN - 6668

Check up on the chain hoists in your shop. Watch how long it takes a worker to raise or lower a load. See if he works with a pained expression. Then investigate the new Industrial Bench and Equipment Company's Brunette rack lifter. It's a sprocket, socket and shaft to apply in a portable drill that you supply. It meshes with the hand hoist chain. Loads go up and down quickly, for $15.65.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6669

the world's most widely used Electronic Supply Guide

free

ALLIED'S COMPLETE UP-TO-DATE CATALOG

the World's Largest Stocks of

ELECTRONIC SUPPLIES FOR INDUSTRY

Simplify and speed your purchasing of electronic supplies and equipment. Send your orders to us at ALLIED—the reliable one-supply-source for *all* your electronic needs. You can depend on immediate shipment from complete, quality lines that are *always in stock*. Send today for your FREE copy of the ALLIED Catalog—the *complete, up-to-date* guide to the world's largest stocks of Electronic Supplies for Industrial use.

One complete dependable source for everything in electronics

ALLIED RADIO
833 W. Jackson Blvd., Dept. 14-F3
Chicago 7, Illinois

If you write maker identify as IEN - 6670

J-M BLAZECRETE cuts refractory maintenance costs . . .

That's why it pays you to use this hydraulic-setting refractory for temperatures to 3000F.

BLAZECRETE* materially reduces labor costs, saves time in building and repairing linings.

For troweling, just mix Blazecrete with water as you'd mix ordinary concrete . . . then slap-trowel it in place. When gunned, it adheres readily with a minimum of rebound loss. Either way, Blazecrete goes on fast, without ramming or tamping. And Blazecrete linings *last*.

Blazecrete comes in three types. All harden on air curing, do not require prefiring. They are furnished as a dry mix—can be stored safely.

3X BLAZECRETE—For temperatures through 3000F. Excellent for forge furnace linings, lime kilns, burner blocks, soaking pits, and industrial boilers.

STANDARD BLAZECRETE—For temperatures through 2400F. Can be used by boiler manufacturers to replace fire clay tile in wall construction.

L. W. BLAZECRETE—For temperatures through 2000F. An insulating refractory . . . light in weight, low in thermal conductivity.

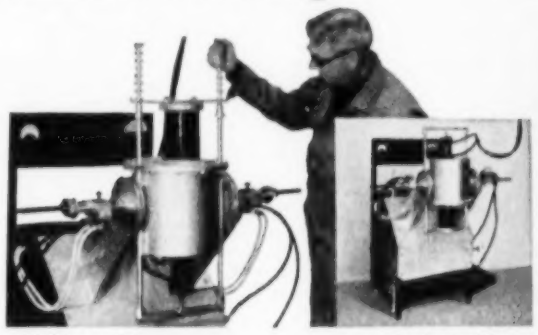
For full details, send for Brochure RC-28A. Write Johns-Manville, Box 60, New York 16, N.Y. In Canada, 199 Bay St., Toronto 1, Ontario.

*Reg. U. S. Pat. Off.

Johns-Manville BLAZECRETE
BUILDS BETTER REFRACTORY LININGS

If you write maker identify as IEN - 6671

Direct-casting Electric Furnace for better, faster precision investment casting



Melting position *Casting position*

The new, type IC, 12 kw., 10-lb. Detroit Electric Furnace melts and pours heats of chrome-nickel, Stellite or superalloy steels in 9-12 minutes. Casting is done by inverting the furnace, pouring directly into the investment mold which is held in place by air pressure. Melting by fast, controlled, indirect arc minimizes carbon pickup and alloy variation. Simple, efficient operation is ideal for high production of precision castings.

Write for complete information.

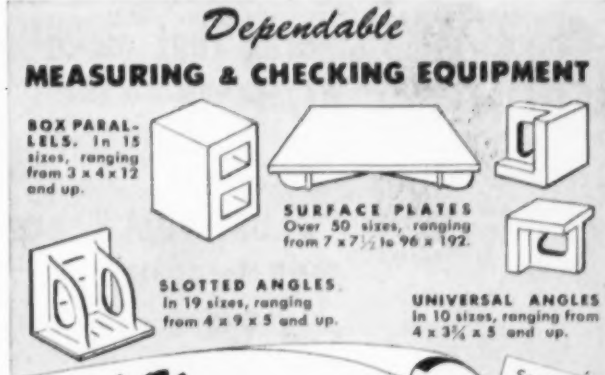
DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: in BRAZIL—Equipamentos Industrias, "Eisa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cia Proveedora de Industrias, Atenas 32-13, Apartado 27A3, Mexico 6, D. F., Mexico; EUROPE, ENGLAND: Birlec, Ltd., Birmingham.

If you write maker identify as IEN - 6672

Dependable

MEASURING & CHECKING EQUIPMENT



and Now

HAND WHEELS, KNOBS, HANDLES

Cadmium Plated READY TO DELIVER

Non-rusting — good looking

Send for Complete Catalog

We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. F Detroit 12, Mich.

If you write maker identify as IEN - 6673

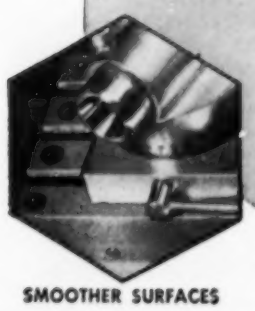
ALLEN⬡HEAD
Flat Head
CAP SCREWS

- Maximum head contact
- Perfect Concentricity
- Threads Class 3 fit
- Burr-free threads and sockets

Allen Flat⬡Head Cap Screws are heavy duty fasteners ideal for fastening thin plates, strips, mouldings and sheet metal parts by combining the advantages of maximum head contact, flush heads, and non-slip keying.

Standard in sizes from No. 4 to ¾" diameter and from ¼" to 3" length, N.C. threads. Many sizes also standard in N.F. threads.

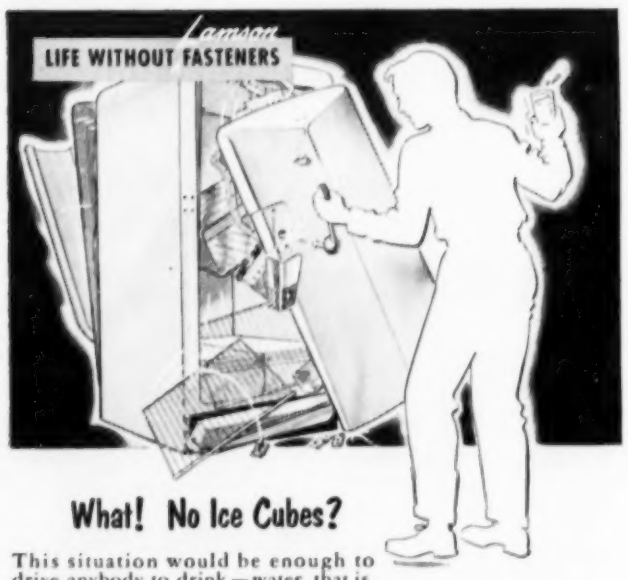
SOLD ONLY THROUGH LEADING INDUSTRIAL DISTRIBUTORS



SMOOTHER SURFACES

THE **ALLEN** MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

If you write maker identify as IEN - 6674



What! No Ice Cubes?

This situation would be enough to drive anybody to drink—water, that is. Yet it shows, in dramatic fashion, how important fasteners are to refrigerators.

Of course, this will never really happen to any modern refrigerator, thanks to the constant fastener research carried on by Lamson & Sessions in cooperation with leading appliance manufacturers.

But there *is* a moral to this story: When you select fasteners for any product, it will pay you to consult Lamson *first*. If the answer isn't already in our files, our years of experience in helping manufacturers select the "just right" fastener for their products, can be of immeasurable value to you.

The LAMSON & SESSIONS Co.
1971 West 85th St. • Cleveland 2, Ohio
CLEVELAND AND KENT, OHIO • BIRMINGHAM • CHICAGO

If you write maker identify as IEN - 6675

Check the Features that make FRONTIER 40-E

ALUMINUM ALLOY PIPE WRENCHES . . .

Perfect for PIPE FITTING

Feather Weight

Rugged Strength

- ✓ HALF THE WEIGHT of ordinary wrenches for easier handling and effortless work.
- ✓ EXTRA STRENGTH to meet rough usage through use of rugged Frontier 40-E Aluminum Alloy.
- ✓ JAWS THAT WON'T LET GO because of sturdy steel teeth. Replaceable steel inserts for jaws simplify wrench maintenance.
- ✓ GUARANTEED AGAINST BREAKAGE in normal use. Sizes range from 14" to 48" to fit specific jobs.
- ✓ TAKES HEAVY PRESSURE. Man in lower illustration weighs 215 pounds, is exerting full pressure 40" from wrench jaw! Sizes 14", 18", 24" and 36".

Use the wrench that's expressly designed for pipefitting problems. Insist on FRONTIER Aluminum Pipe Wrenches.

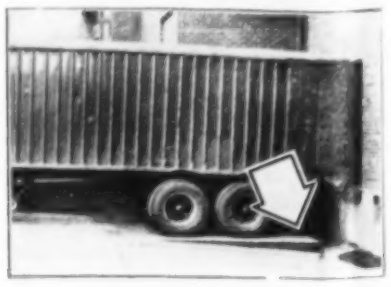
Ask your jobber, or write today to:

FRONTIER BRONZE CORPORATION
4887 Packard Road, Niagara Falls, N. Y.

If you write maker identify as IEN - 6676

ELEVATOR . . Hydraulic ramp raises or lowers rear of motor truck

SOURCE: ROWE METHODS INC.
2532-35 Detroit Ave., Cleveland 13, Ohio



Truck goes up or down

Load rating is 20 ton for this new Adjust-A-Truck elevator. It assembles into the pavement in front of a loading dock and is intended particularly for locations where room is not sufficient on the dock itself or in front of the dock to install a ramp.

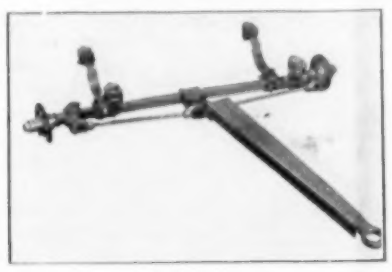
Standard stroke is 18 and 24 in. by means of a motor driven hydraulic power unit consisting of the motor, pump, reservoir, check valve, solenoid operated release valve and pressure relief valve to serve the hydraulic cylinder. The piston rod that operates in the single acting cylinder is chromium plated. A stuffing box contains chevron type packing retained by a brass gland and protected by a wiper to prevent entrance of dirt.

Standard deck size is 10 by 12 feet. A second size measuring 9 by 12 ft. can be specified. Control centers at a wall mounted momentary contact double push button station. Operation is on 110-volt 60 cycle ac.

If you write maker identify as IEN - 6677

UNDERCARRIAGE . . Axle assembly with tongue and steering mechanism

Source: UNITED MFG. CO.
11 W. Interstate St., Bedford, Ohio



Symmetrical arms

Square beam, measuring 1¾ in., forms the axle of this new assembly in the Caravan line, previously described IEN-1552-52. The new unit with its springs, pivoted wheel hubs, steering mechanism and tongue has a rated load capacity of 1 to 2 ton. It is characterized by its controlled camber, toe-in and caster to facilitate positive trailing action at high speeds. It is equipped with threaded grease fittings at the bearing points.

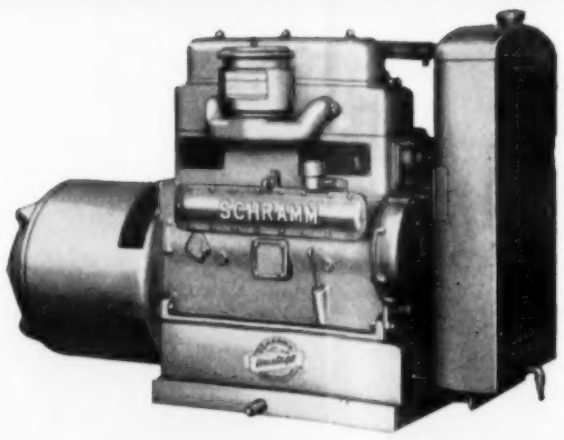
Typical applications, in connection with a rear trailing axle, are in carrying generators, air compressors, welding equipment, pumps, tar kettles, concrete mixers, steam cleaners, utility poles, fire fighting apparatus, field drilling equipment.

Identify as IEN - 6678

Aerosol pressure spray containers, 12 ounces each, are available with marking paints in colors. Materials can be identified in process and storage by little squirts of given colors. No surface preparation is required. The paint dries quickly, sticks tightly. Crown Industrial Products Company sells the cans in cases of 12 or in single units.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50.

If you write maker identify as IEN - 6679



Direct Motor Drive Compressor With Cooling Unit

- NO ELABORATE FOUNDATIONS WHEN INSTALLING THE MODERN SCHRAMM AIR COMPRESSORS.
- VIBRATIONLESS . . . EASY TO MOVE . . . EASY TO INSTALL.
- FURNISHED COMPLETE WITH ALL NECESSARY ACCESSORIES.
- SIZES FROM ½ TO 100 HORSEPOWER, DIRECT CONNECTED, V-BELT DRIVE AND TANK MOUNTED.

Write for Bulletin SSB-51A

SCHRAMM INC. THE COMPRESSOR PEOPLE
WEST CHESTER PENNSYLVANIA

If you write maker identify as IEN - 6680

Engineered Air Regulation

KENDALL MODEL 30

Precision Air Pressure Regulator
AVAILABLE ¼" or ⅜" N. P. T.
RANGES 0-10, 30, 60, 100 PSIG
Send for BULLETIN 9523

FIRST TRUE HIGH PRECISION AIR PRESSURE REGULATING VALVE AT NEW LOW COST

FEATURES:
☆ Perfect Balance — complete immunity from upstream pressure changes ☆ Large Flow Capacity (35CFM) — automatic relief — flow compensation ☆ Small Physical Size ☆ Removable Stainless Steel Valve Trim ☆ Deep Convolution Constant Area Diaphragms made by our own Bellofram Division ☆ Aircraft Quality materials and finishes ☆ Adaptable to all types of mounting ☆ New Low Unit Cost

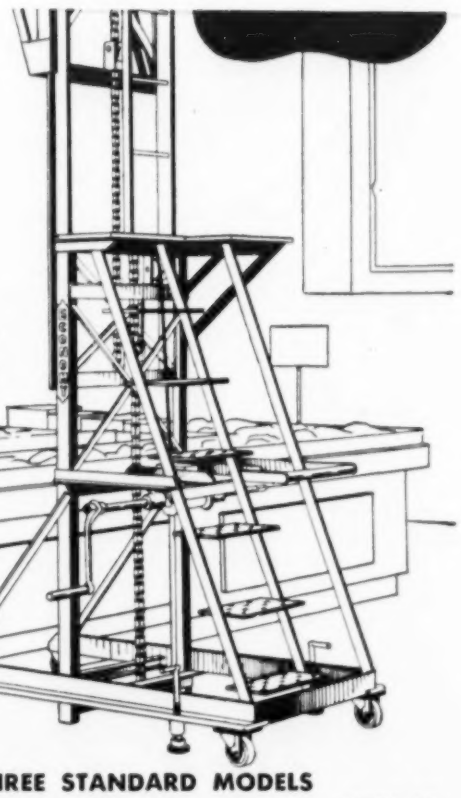
APPLICATIONS:
☆ *Instrument service—internal and external*
☆ *Pneumatic gauges* ☆ *Paint sprayers* ☆ *Machine shop use*
☆ *Diaphragm and cylinder air loading*

KENDALL CONTROLS CORPORATION
144 MOODY STREET WALTHAM 54, MASS.

If you write maker identify as IEN - 6681

WAV

PAG



THREE STANDARD MODELS

No. 1—Platform lift 10'9"	$305.00
No. 2—Platform lift 11'9"	315.00
No. 3—Platform lift 15'0"	340.00

Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street • Chicago 24, Illinois

If you write maker identify as IEN - 6683

Here's BIG HELP IN TERMINAL WIRING!

The correct wire to correct terminal every time!

The New JONES FANNING STRIP

Connections are made through Fanning Strip, on bench or anywhere apart from barrier strip, and quickly slipped into assembly.

Designed for use with Jones Barrier Terminal Strips Nos. 141 and 142, for 1 to 20 terminals.

9-141 Barrier Strip

Simplifies and facilitates soldering. Insures positive correct connections. Saves time. Ideal for harness or cable assembly. Strong construction: Brass terminals, cadmium plated. Heavy bakelite mounting.

9-161 Fanning Strip. Pat. applied for.

Send for complete data on this new basic improvement!

Jones HOWARD B. JONES DIVISION CINCH MANUFACTURING CORPORATION CHICAGO 24, ILLINOIS SUBSIDIARY OF UNITED-CARR FASTENER CORP.

-6684

VY

es?

GES

HHB CAN MAKE THEM FOR YOU!

Whatever the design, or requirement . . . standard and special, HHB can provide skill and facilities to make cable assemblies to your exact specifications.

Or, if you are a user of connectors and components, including AN Types, RF Types, Rack and Panel Types, and special items, we can help you with your requirements.

A new HHB catalog is available illustrating many of these outstanding products of HHB craftsmanship. A copy will be mailed to you if requested on your business letterhead.

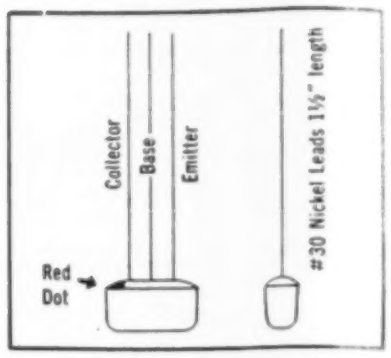
H. H. BUGGIE And Company
TOLEDO 4, OHIO
Sales Engineers in All Principal Cities

Skilled in Electronic Component Parts RESEARCH • DESIGN ENGINEERING MANUFACTURING

If you write maker identify as IEN - 6686

ELECTRONIC PART . . Transistor performs functions of vacuum tube

Source: FEDERATED SEMI-CONDUCTOR CO.
66 Dey St., 1st floor, New York 7, N. Y.



Connections shown

One improved and two new transistors are announced by the company which acts as sales agent for Germanium Products Corporation. All are N-P-N junction types manufactured under Western Electric Co. license and available from stock. Each is housed in a plastic case measuring $\frac{17}{32}$ in. in length, $\frac{13}{64}$ in. in width, $\frac{23}{64}$ in. in height. Leads are No. 30 nickel wire 1½ in. in length.

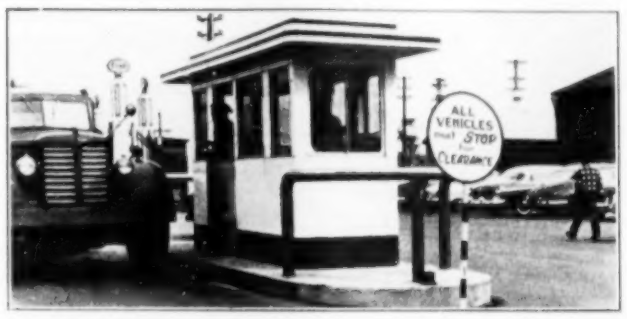
Type RD-2517 is a general-purpose transistor recently improved in manufacture. It now lists at $12.50 each for ten or less, $8.25 each for 1,000 or more. Type RD-2520 is a new medium-alpha unit for grounded-base operation. It lists at $16 to $11.50 in the same quantities. Type RD-2525 is a new high-alpha unit for grounded-emitter service. It lists at $30.

Functions as an electronic component include amplification, oscillation, pulse generation, pulse counting. Life is extremely long for a grown-junction transistor. Aging effects are small. Operation is at comparatively low voltage. Practically no heat is produced. Data sheets are available on each design.

If you write maker identify as IEN - 6687

BUILDING . . Packaged gatehouse is made of porcelain enameled steel

Source: ERIE ENAMELING CO.
1402 W. 20th St., Erie, Pa.



Ready for use on arrival

Dimensions, color combinations, equipment, design are all subject to specification at present for this new factory assembled gatehouse. The unit shown in the illustration was built for Standard Oil Company's refinery in Elizabeth, New Jersey. It was shipped as a complete unit from Erie, Pa., by truck. It was in place and "doing business' eight hours after its arrival.

The assembly includes glare proof, shatter proof sliding windows, two electric heaters, communicating equipment, fluorescent lighting, a Formica counter, asphalt tile floor covering, drop seats for two attendants, hinged aluminum splash guards at the doorways.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6688

Use Mutual LP-GAS Furnaces and Torches

REDUCE MAN HOURS CUT COSTS

For every industrial heating job LP-GAS will do it faster, better and cheaper. Reduce man hours and increase your profits with this modern fuel available everywhere. No pumping or priming. Starts instantly and won't blow out. Equipment is safe, lightweight, easy to handle. Mutual's 20 years' experience is built into every furnace, torch, heater and burner. Insist on MUTUAL—superior in performance and workmanship. You'll find our service superior too. Write us today about your heating or melting job. You'll receive our recommendation bulletin and prices by return mail.

Mutual LIQUID GAS EQUIPMENT CO., Inc.
3600 WEST IMPERIAL HIGHWAY, INGLEWOOD, CALIF.

If you write maker identify as IEN - 6689

There was a young worker named Printer
Who slipped and got stuck with a splinter!
Then he heeded a tip
And installed Multigrip . . .
Now he's safe though he speeds like a sprinter!

U·S·S multigrip FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 3-693

UNITED STATES STEEL

If you write maker identify as IEN - 6690

UNIVERSAL EXPANDED METAL FLOOR TRUCKS

MODEL 4-A
Length 60", width 30", height 30".

MODEL 4-B
Length 60", width 30", height 48".

• Greater Economy
• Greater Utility

Literature Mailed Promptly Upon Request

Durable, highly maneuverable, economically priced. Designed to meet a wide range of material handling jobs. Rigid angle iron frame. Equipped with four 4" ball-bearing fiber casters—swivel casters centered at front and rear; rigid casters centered on each side. Model 4-B has hinged drop panel on side equipped with positive safety latches.

• Also other types of expanded metal containers in sizes and quantites to customer's specifications.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

If you write maker identify as IEN - 6691

PIONEER BELT DRIVEN GENERATORS

the portable power you need in your plant to DELIVER CURRENT EFFICIENTLY & ECONOMICALLY!

For portable power inside or out the plant, Pioneer Generators are *dependable* and *capable* of operating under *all* weather conditions. For Stand-By insurance when regular power fails, generators can run power tools and lights to meet all your needs. *Over 20 years* of manufacturing experience gives you engineering know-how and efficiency. **Write today** for catalogs and prices on Pioneer 500 to 5000 watt Generators for every industrial use.

PIONEER Gen-E-Motor Corporation
5831 West Dickens Avenue • Chicago 39, Illinois

If you write maker identify as IEN - 6673

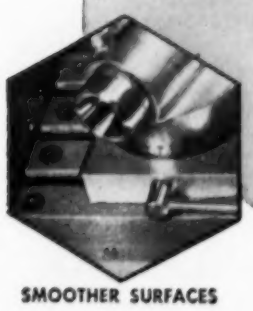
ALLEN⬡HEAD
Flat Head
CAP SCREWS

- Maximum head contact
- Perfect Concentricity
- Threads Class 3 fit
- Burr-free threads and sockets

Allen Flat⬡Head Cap Screws are heavy duty fasteners ideal for fastening thin plates, strips, mouldings and sheet metal parts by combining the advantages of maximum head contact, flush heads, and non-slip keying.

Standard in sizes from No. 4 to ¾" diameter and from ¼" to 3" length, N.C. threads. Many sizes also standard in N.F. threads.

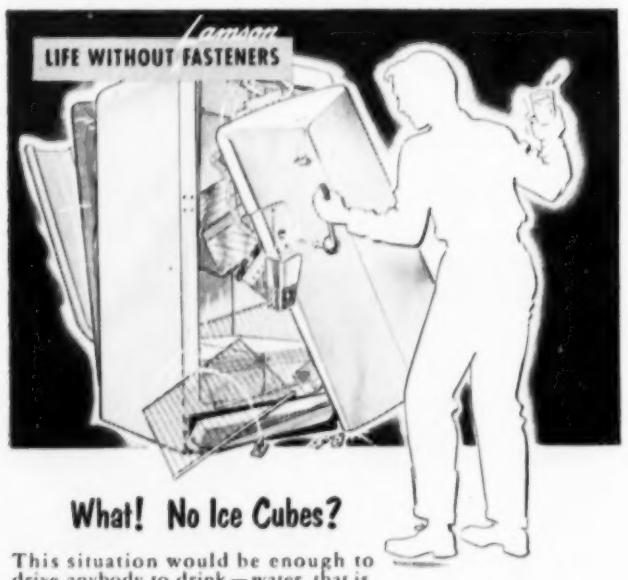
SOLD ONLY THROUGH LEADING INDUSTRIAL DISTRIBUTORS



SMOOTHER SURFACES

THE ALLEN MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

If you write maker identify as IEN - 6674



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The LAMSON & SESSIONS Co.
1971 West 85th St. • Cleveland 2, Ohio
CLEVELAND AND KENT, OHIO • BIRMINGHAM • CHICAGO

If you write maker identify as IEN - 6675

Check the Features that make FRONTIER 40-E

ALUMINUM ALLOY PIPE WRENCHES . . .

Perfect for PIPE FITTING

Feather Weight

Rugged Strength

- ✓ HALF THE WEIGHT of ordinary wrenches for easier handling and effortless work.
- ✓ EXTRA STRENGTH to meet rough usage through use of rugged Frontier 40-E Aluminum Alloy.
- ✓ JAWS THAT WON'T LET GO because of sturdy steel teeth. Replaceable steel inserts for jaws simplify wrench maintenance.
- ✓ GUARANTEED AGAINST BREAKAGE in normal use. Sizes range from 14" to 48" to fit specific jobs.
- ✓ TAKES HEAVY PRESSURE. Man in lower illustration weighs 215 pounds, is exerting full pressure 40" from wrench jaw! Sizes 14", 18", 24" and 36".

Use the wrench that's expressly designed for pipefitting problems. Insist on FRONTIER Aluminum Pipe Wrenches.

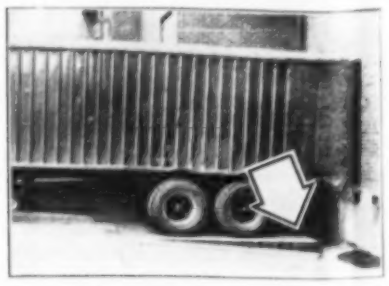
Ask your jobber, or write today to:

FRONTIER BRONZE CORPORATION
4887 Packard Road, Niagara Falls, N. Y.

If you write maker identify as IEN - 6676

ELEVATOR . . Hydraulic ramp raises or lowers rear of motor truck

SOURCE: ROWE METHODS INC.
2532-35 Detroit Ave., Cleveland 13, Ohio



Truck goes up or down

Load rating is 20 ton for this new Adjust-A-Truck elevator. It assembles into the pavement in front of a loading dock and is intended particularly for locations where room is not sufficient on the dock itself or in front of the dock to install a ramp.

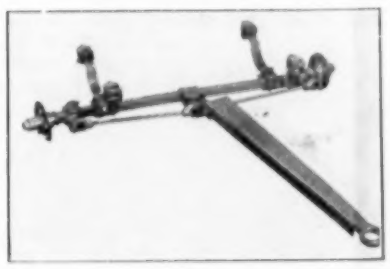
Standard stroke is 18 and 24 in. by means of a motor driven hydraulic power unit consisting of the motor, pump, reservoir, check valve, solenoid operated release valve and pressure relief valve to serve the hydraulic cylinder. The piston rod that operates in the single acting cylinder is chromium plated. A stuffing box contains chevron type packing retained by a brass gland and protected by a wiper to prevent entrance of dirt.

Standard deck size is 10 by 12 feet. A second size measuring 9 by 12 ft. can be specified. Control centers at a wall mounted momentary contact double push button station. Operation is on 110-volt 60 cycle ac.

If you write maker identify as IEN - 6677

UNDERCARRIAGE . . Axle assembly with tongue and steering mechanism

Source: UNITED MFG. CO.
11 W. Interstate St., Bedford, Ohio



Symmetrical arms

Square beam, measuring 1¾ in., forms the axle of this new assembly in the Caravan line, previously described IEN-1552-52. The new unit with its springs, pivoted wheel hubs, steering mechanism and tongue has a rated load capacity of 1 to 2 ton. It is characterized by its controlled camber, toe-in and caster to facilitate positive trailing action at high speeds. It is equipped with threaded grease fittings at the bearing points.

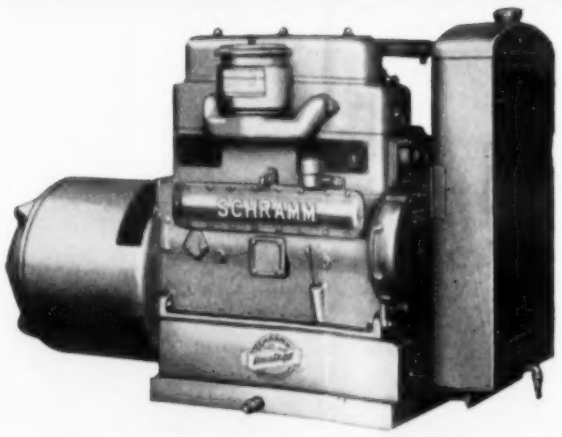
Typical applications, in connection with a rear trailing axle, are in carrying generators, air compressors, welding equipment, pumps, tar kettles, concrete mixers, steam cleaners, utility poles, fire fighting apparatus, field drilling equipment.

Identify as IEN - 6678

Aerosol pressure spray containers, 12 ounces each, are available with marking paints in colors. Materials can be identified in process and storage by little squirts of given colors. No surface preparation is required. The paint dries quickly, sticks tightly. Crown Industrial Products Company sells the cans in cases of 12 or in single units.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6679



Direct Motor Drive Compressor With Cooling Unit

- NO ELABORATE FOUNDATIONS WHEN INSTALLING THE MODERN SCHRAMM AIR COMPRESSORS.
- VIBRATIONLESS . . . EASY TO MOVE . . . EASY TO INSTALL.
- FURNISHED COMPLETE WITH ALL NECESSARY ACCESSORIES.
- SIZES FROM ½ TO 100 HORSEPOWER, DIRECT CONNECTED, V-BELT DRIVE AND TANK MOUNTED.

Write for Bulletin SSB-51A

SCHRAMM INC. THE COMPRESSOR PEOPLE
WEST CHESTER PENNSYLVANIA

If you write maker identify as IEN - 6680

Engineered Air Regulation

KENDALL MODEL 30

Precision Air Pressure Regulator
AVAILABLE ¼" or ⅜" N. P. T.
RANGES 0-10, 30, 60, 100 PSIG
Send for BULLETIN 9523

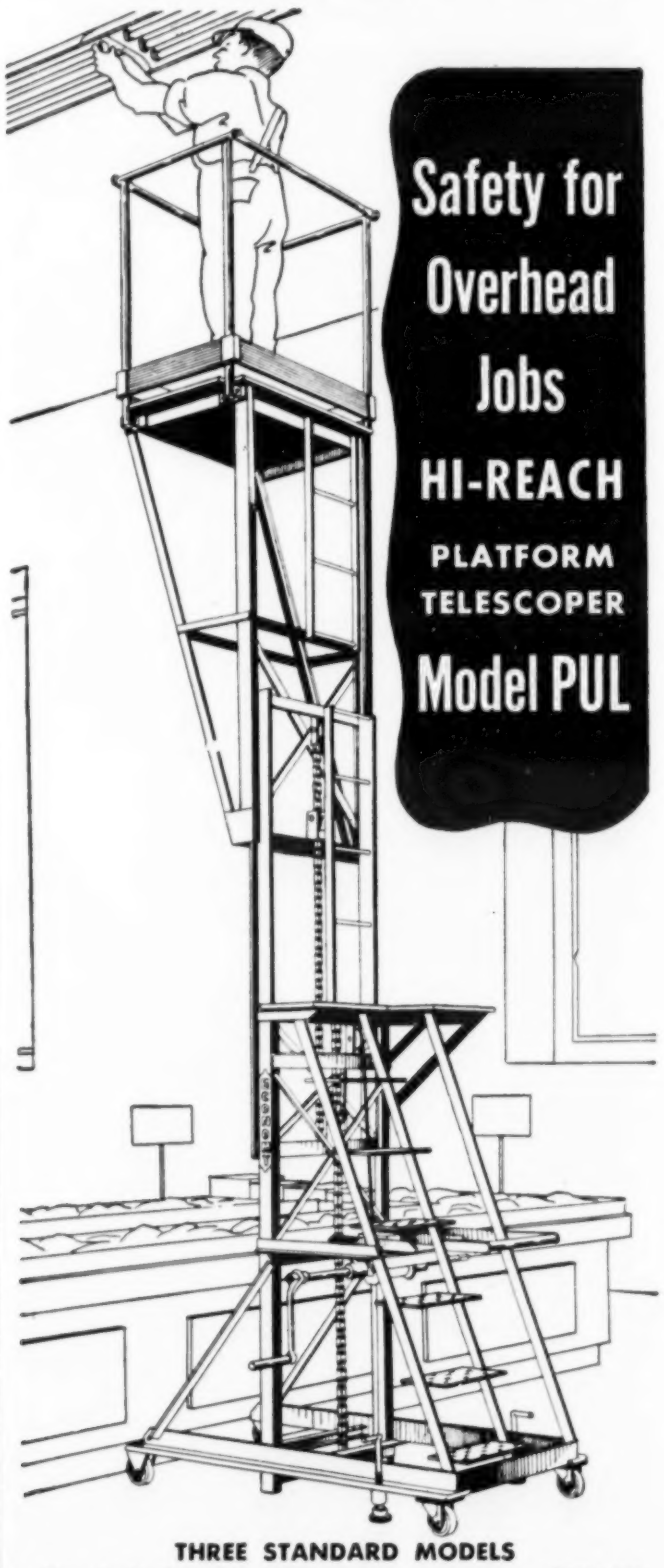
FIRST TRUE HIGH PRECISION AIR PRESSURE REGULATING VALVE AT NEW LOW COST

FEATURES:
☆ Perfect Balance — complete immunity from upstream pressure changes ☆ Large Flow Capacity (35CFM) — automatic relief — flow compensation ☆ Small Physical Size ☆ Removable Stainless Steel Valve Trim ☆ Deep Convolution Constant Area Diaphragms made by our own Bellofram Division ☆ Aircraft Quality materials and finishes ☆ Adaptable to all types of mounting ☆ New Low Unit Cost

APPLICATIONS:
☆ *Instrument service—internal and external*
☆ *Pneumatic gauges* ☆ *Paint sprayers* ☆ *Machine shop use*
☆ *Diaphragm and cylinder air loading*

KENDALL CONTROLS CORPORATION
144 MOODY STREET WALTHAM 54, MASS.

If you write maker identify as IEN - 6681



Safety for Overhead Jobs
HI-REACH PLATFORM TELESCOPER
Model PUL

THREE STANDARD MODELS

No. 1—Platform lift	10'9"	$305.00
No. 2—Platform lift	11'9"	315.00
No. 3—Platform lift	15'0"	340.00

Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street • Chicago 24, Illinois

If you write maker identify as IEN - 6683

Here's BIG HELP IN TERMINAL WIRING!

The correct wire to correct terminal every time!

The New JONES FANNING STRIP

Connections are made through Fanning Strip, on bench or anywhere apart from barrier strip, and quickly slipped into assembly.

Designed for use with Jones Barrier Terminal Strips Nos. 141 and 142, for 1 to 20 terminals.

9-141 Barrier Strip

9-161 Fanning Strip. Pat. applied for.

Simplifies and facilitates soldering. Insures positive correct connections. Saves time. Ideal for harness or cable assembly. Strong construction: Brass terminals, cadmium plated. Heavy bakelite mounting.

Send for complete data on this new basic improvement!

Jones — HOWARD B. JONES DIVISION, CINCH MANUFACTURING CORPORATION, CHICAGO 24, ILLINOIS. SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as IEN - 6684

Cable assemblies?

HHB CAN MAKE THEM FOR YOU!

Whatever the design, or requirement . . . standard and special, HHB can provide skill and facilities to make cable assemblies to your exact specifications.

Or, if you are a user of connectors and components, including AN Types, RF Types, Rack and Panel Types, and special items, we can help you with your requirements.

A new HHB catalog is available illustrating many of these outstanding products of HHB craftsmanship. A copy will be mailed to you if requested on your business letterhead.

H. H. BUGGIE And Company

TOLEDO 4, OHIO

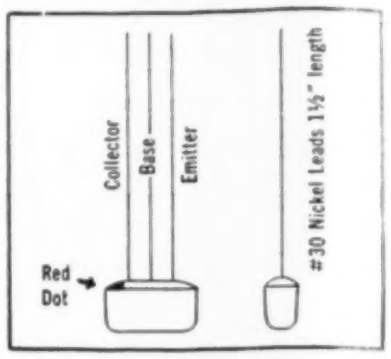
Sales Engineers in All Principal Cities

Skilled in Electronic Component Parts RESEARCH • DESIGN ENGINEERING MANUFACTURING

If you write maker identify as IEN - 6686

ELECTRONIC PART . . Transistor performs functions of vacuum tube

Source: FEDERATED SEMI-CONDUCTOR CO. 66 Dey St., 1st floor, New York 7, N. Y.



Connections shown

One **improved** and two new transistors are announced by the company which acts as sales agent for Germanium Products Corporation. All are N-P-N junction types manufactured under Western Electric Co. license and available from stock. Each is housed in a plastic case measuring 17/32 in. in length, 13/64 in. in width, 23/64 in. in height. Leads are No. 30 nickel wire 1½ in. in length.

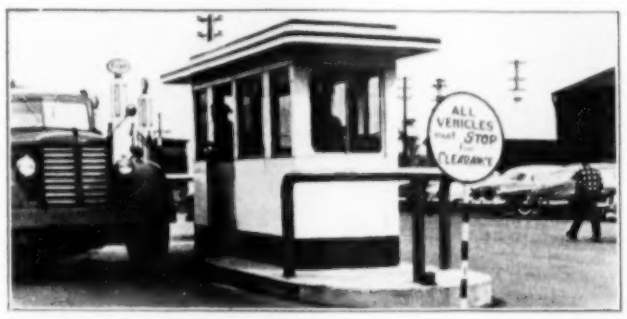
Type RD-2517 is a general-purpose transistor recently improved in manufacture. It now lists at $12.50 each for ten or less, $8.25 each for 1,000 or more. Type RD-2520 is a new medium-alpha unit for grounded-base operation. It lists at $16 to $11.50 in the same quantities. Type RD-2525 is a new high-alpha unit for grounded-emitter service. It lists at $30.

Functions as an electronic component include amplification, oscillation, pulse generation, pulse counting. Life is extremely long for a grown-junction transistor. Aging effects are small. Operation is at comparatively low voltage. Practically no heat is produced. Data sheets are available on each design.

If you write maker identify as IEN - 6687

BUILDING . . Packaged gatehouse is made of porcelain enameled steel

Source: ERIE ENAMELING CO. 1402 W. 20th St., Erie, Pa.



Ready for use on arrival

Dimensions, color combinations, equipment, design are all subject to specification at present for this new factory assembled gatehouse. The unit shown in the illustration was built for Standard Oil Company's refinery in Elizabeth, New Jersey. It was shipped as a complete unit from Erie, Pa., by truck. It was in place and "doing business" eight hours after its arrival.

The assembly includes glare proof, shatter proof sliding windows, two electric heaters, communicating equipment, fluorescent lighting, a Formica counter, asphalt tile floor covering, drop seats for two attendants, hinged aluminum splash guards at the doorways.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6688

Use Mutual LP-GAS Furnaces and Torches

REDUCE MAN HOURS CUT COSTS

For every industrial heating job LP-GAS will do it faster, better and cheaper. Reduce man hours and increase your profits with this modern fuel available everywhere. No pumping or priming. Starts instantly and won't blow out. Equipment is safe, lightweight, easy to handle. Mutual's 20 years' experience is built into every furnace, torch, heater and burner. Insist on MUTUAL—superior in performance and workmanship. You'll find our service superior too. Write us today about your heating or melting job. You'll receive our recommendation bulletin and prices by return mail.

Mutual LIQUID GAS EQUIPMENT CO., Inc. 3600 WEST IMPERIAL HIGHWAY, INGLEWOOD, CALIF.

If you write maker identify as IEN - 6689

There was a young worker named Printer
Who slipped and got stuck with a splinter!
Then he heeded a tip
And installed Multigrip . . .
Now he's safe though he speeds like a sprinter!

U·S·S multigrip FLOOR PLATE

UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, CHICAGO
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

Sold by leading distributors from coast to coast 3-693

UNITED STATES STEEL

If you write maker identify as IEN - 6690

UNIVERSAL EXPANDED METAL FLOOR TRUCKS

MODEL 4-A
Length 60", width 30", height 30".

- Greater Economy
- Greater Utility

Literature Mailed Promptly Upon Request

MODEL 4-B
Length 60", width 30", height 48".

Durable, highly maneuverable, economically priced. Designed to meet a wide range of material handling jobs. Rigid angle iron frame. Equipped with four 4" ball-bearing fiber casters—swivel casters centered at front and rear; rigid casters centered on each side. Model 4-B has hinged drop panel on side equipped with positive safety latches.

- Also other types of expanded metal containers in sizes and quantites to customer's specifications.

INDUSTRIAL ENGINEERING & MFG. CO., INC. BRIMFIELD, INDIANA, U.S.A.

If you write maker identify as IEN - 6691

PIONEER BELT DRIVEN GENERATORS

the portable power you need in your plant to **DELIVER CURRENT EFFICIENTLY & ECONOMICALLY!**

For portable power inside or out the plant, Pioneer Generators are *dependable* and *capable* of operating under *all* weather conditions. For Stand-By insurance when regular power fails, generators can run power tools and lights to meet all your needs. *Over 20 years* of manufacturing experience gives you engineering know-how and efficiency. **Write today** for catalogs and prices on Pioneer 500 to 5000 watt Generators for every industrial use.

PIONEER Gen-E-Motor Corporation
5831 West Dickens Avenue • Chicago 39, Illinois

If you write maker identify as IEN - 6692

Just a single stroke!...

CUTS ROUND RODS 1/8" to 7/8" on a

MARVEL ROD CUTTER

Available in three models:

No. 5	1/8	3/16	1/4	5/16	3/8
No. 6	3/8	7/16	1/2	9/16	5/8
No. 7	3/8	1/2	5/8	3/4	7/8

These are bench models, but the No. 7 MARVEL Rod Cutter can be furnished mounted on legs. See your Industrial Distributor or write us for literature and prices.

ARMSTRONG-BLUM MFG. CO.
5700 W. Bloomingdale Ave. • Chicago 39, U.S.A.
Manufacturers of the outstanding MARVEL Metal Saws.

If you write maker identify as IEN - 6693

Lasts Longer...

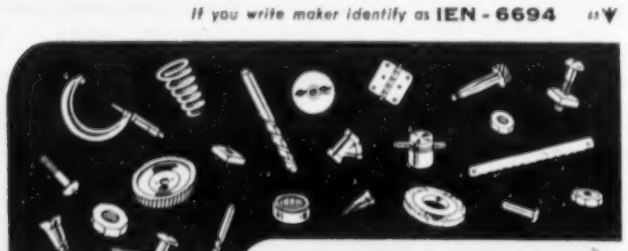
HOUGHTON
COSMOLUBE
multi-purpose grease

Allows more time between greasings!

• This heavy-duty grease is widely used throughout industry because it works well in *hot, cold* or *wet* locations. It adheres to metal and resists oxidation. Won't separate. Try Cosmolube for your tough grease jobs. For latest bulletin, write:

E. F. HOUGHTON & CO. PHILADELPHIA 33, PA.

If you write maker identify as IEN - 6694



CHASE RED TYE Drawstring Bags

The economical and safe way to ship or store nuts, bolts, small parts and samples of your product. Sizes available for every need. Samples and prices on request.

CHASE BAG COMPANY
GENERAL SALES OFFICES: 309 W. JACKSON BLVD., CHICAGO 6, ILL.
50 BRANCHES AND SALES OFFICES STRATEGICALLY LOCATED

If you write maker identify as IEN - 6695

AIR CONDITIONING . . Space unit cleans, cools, circulates air, can heat

Source: FRICK CO.
320 Broadway, Waynesboro, Pa.

Ask for Bulletin 522-C

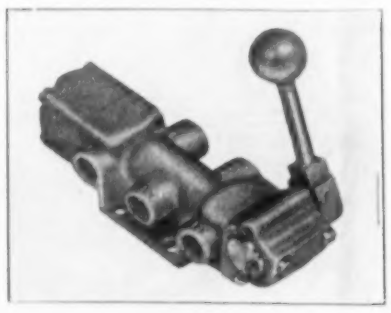
Air intake to this new 3-hp. conditioner is through a grille at about the center of the housing. The air turns upward inside the housing to pass through a filter and above it a cooling coil for movement to a motor driven bearing blower. The blower delivers to a top plenum chamber fitted on its face with a grille and adjustable discharge louvers. Blower rating is 1,300 cfm. Overall dimensions are about 38 by 24½ by 81 inches. The new unit is the third in the company's line which now includes 3, 5 and 7½-hp. assemblies for air conditioning service.

A refrigerant compressor, handling Freon, is mounted with an insulated condenser in the bottom compartment of the housing. Freon gas, returning to the condenser, is cooled and converted back to liquid by cold water flow through the condenser coil. Water flow rate is about 4½ gpm. at 75 deg. F. on rated load. Cooling capacity is nominally 3 ton.

If you write maker identify as IEN - 6696

VALVE . . Two, three, four way, controls air or liquid to 200 pounds

Source: VERSA PRODUCTS CO.
247-51 Scholes St., Brooklyn 6, N. Y.



Ask for Folder 11

Balanced spool in the bronze body of this new Versa operating valve is positioned by operating a hand lever in the design shown in the illustration. It can be supplied with spring or lever return, with cam, pressure pilot or foot operation, also with spring return or to hold in set position until return action is applied by the operator.

Two sizes in the line have 1/8 and 1/4-in. pipe threaded ports. The assembly includes O rings for the sealing action, brass internal parts. The only servicing tool is a screwdriver. The valve shown measures 6⅛ in. in length, 2 in. in width, 1⅝ in. in body height. Required operating force is negligible.

Identify as IEN - 6697

Suggestion Day has been inaugurated at Remington Rand Electric Shaver Division. The event takes the place of the day-by-day plan that tends to drag. Promotion was put back of the idea several weeks ahead of time. When the day arrived the company collected 467 suggestions from 1,300 employees. This compares with 187 made during 1952.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6698

Specify GM *PRECISION-ENGINEERED*

SERVO MOTORS

RELIABLE PERFORMANCE
RUGGED CONSTRUCTION

ACTUAL SIZE

In the operation of—
- GUNFIRE CONTROLS
- ROCKET CONTROLS
- GUIDED MISSILES
- AIRCRAFT CONTROLS
- INDUSTRIAL CONTROLS

G-M Servo Motors can be supplied to meet rigid military specifications with regard to humidity, temperature range, vibration and altitude. Available in 2, 4 or 8 pole construction and for frequencies from 60 to 400 cycles.

Write today for complete information.

Another product of GM LABORATORIES • Inc.
4334 NORTH KNOX AVENUE, CHICAGO 41, ILLINOIS

If you write maker identify as IEN - 6699

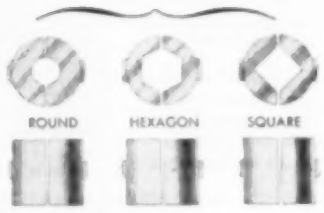
HARDINGE ELMIRA, N.Y.

Style "B"

Master Feed Fingers and Pads

Replaceable pads are interchangeable among different makes of automatics with the same capacity. Available for all sizes of the following machines up to and including 3½" capacity:

BROWN & SHARPE
CLEVELAND
CONE
DAVENPORT
GREENLEE
GRIDLEY & ACME-GRIDLEY
NATIONAL ACME
NEW BRITAIN



Each pad also furnished in Hardened Steel, Nickel Cast Iron, or Bronze to suit all materials and classes of screw machine work.

HARDINGE BROTHERS, INC., ELMIRA, N. Y.

If you write maker identify as IEN - 6700

where aisles are narrow, floor-loads limited, solve your handling problems with

KALAMAZOO
Xpediter

...brought to you by KALAMAZOO | ...70 years service to railroads and industry

HANDLES BOXES, BAGS, BARRELS, PRODUCE AND OTHER MATERIALS.

7 Models to Suit Your Particular Needs, Weighing from 715 to 1025 Pounds.

MODEL 301 with 18" forks, hydraulic tilt and 16" lift.

Here's a light-weight, low-cost industrial truck that speeds handling, cuts costs in congested areas and on light floors and elevators where larger, heavier equipment cannot operate. Xpediter's unequalled maneuverability and versatility makes it an important adjunct to your present handling equipment . . extends the advantages of mechanical handling to every corner of your plant or warehouse.

Operation of Xpediter is simplicity itself. As easy to steer as a bicycle. No gear shifting required for forward and reverse travel. Simple, conveniently located hydraulic controls. Six rugged models, hydraulic or manual lift. For complete details, get Bulletin XN 63.

Send, too, for details on these Kalamazoo Trucks . . proven in service throughout the country.

KALAMAZOO MODEL 2500 SPEED TRUCK, 2,000 and 3,500 pound capacities. Operates in narrow aisles and box cars.
Get Bulletin SN63

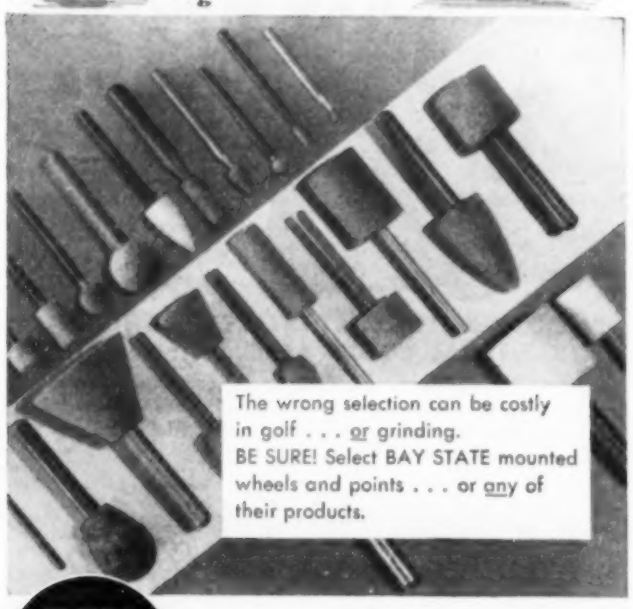
KALAMAZOO MODEL 3600 TRACTOR. A fast efficient cargo carrier for congested areas. Ideal for small tractor-trailer operation.
Get Bulletin TN63

KAL-TRUK handles all types of bulk materials on construction jobs and in plants. Capacity: ⅔ cu. yd. of concrete, 1 cu. yd. of bulk material.
Get Bulletin KN63

SOME EXCELLENT DEALER TERRITORIES OPEN . . . WRITE FOR COMPLETE INFORMATION

KALAMAZOO MANUFACTURING COMPANY
KALAMAZOO, MICH. U.S.A.

If you write maker identify as IEN - 6702



BAY STATE

BAY STATE ABRASIVE PRODUCTS CO.
Westboro, Massachusetts, U. S. A.
Branch Offices and Warehouses:
Chicago, Cleveland, Detroit, Pittsburgh
Distributors — All Principal Cities
In Canada: Bay State Abrasive Products Co. (Canada) Ltd., Brantford, Ont.

If you write maker identify as IEN - 6703

More Jack for your Money!

Give your schedules a real lift with Buda Jacks . . . most powerful, fastest, safest Ratchet Lowering Jacks available. These jacks are tested in excess of rated capacity. They need less blocking, set-up and toe clearance.

LIFT 5 TONS 9⅝" FROM 1¼" TOE CLEARANCE

Model 175-B Buda is a multi-purpose jack with broad wearing surfaces, lower bearing pressure and easy lubrication. Cannot be tripped!

LIFT 15 TONS FOUR WAYS

For heavy-duty lifting, pulling or straightening, "All Purpose" Model 2215-SB Buda Jack has hinged base for angle jacking and shifting. Special head for auxiliary cap shoe, 5' chain with lift and grab hooks, or 8' chain with pear link. Cannot be tripped!

Write for new Bulletin 1515B and complete details on BUDA's complete line of mechanical and hydraulic jacks. "A Jack for every Job."

THE BUDA COMPANY
Harvey, Illinois

If you write maker identify as IEN - 6704

$34.50

Sands
Cleans
Smooths
Polishes

Three 4½" x 6½" coverings cut from standard 9" x 11" abrasion sheet.

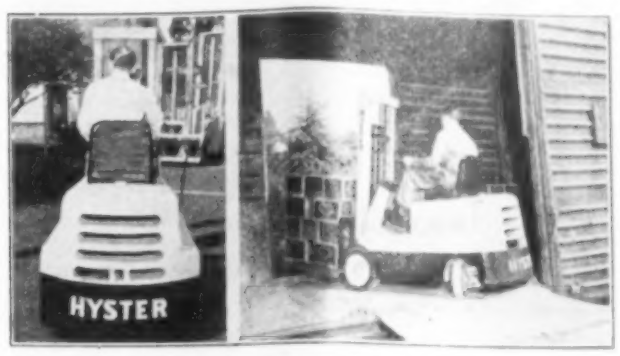
Makes a hundred tedious jobs fast and easy. Will sand to the bare wood or metal, featheredge, or smooth and polish to a "piano finish." Powerful direct-connect, 3450 r.p.m. 110 v., A.C. air-cooled motor. No gears, nor gear-housing to collect grit and dust. Sealed ball-bearing thruout. Cast-aluminum body and chrome plated—in hand weight only 5 lbs. Natural grip, all-position handle with sliding thumb switch and 3 wire rubber-covered cord.

WRITE FOR CIRCULAR
Speed Way MANUFACTURING CO.
1885 So. 52nd Avenue • Cicero 50, Illinois

If you write maker identify as IEN - 6705

TRUCKS . . Engine drive fork lift, 1½ and 2 ton for plant and loading

Source: HYSTER CO.
2616 N. E. Clackamas St., Portland 8, Oregon



Equipped with cushion type tires

Model YC-40 and Model UC-30 are two new engine driven fork lift trucks. Both are basically the same construction. Difference lies in the smaller counterweight carried by the 1½-ton assembly. Ratings are based on 24-in. load centers. Drive, in both cases, is by a water cooled industrial gasoline engine. Both trucks feature compact assembly, heavy duty construction and maneuverability in confined locations.

Overall dimensions are 38 in. in width, 78½ in. in length, 82½ in. in lowered height of the uprights. The load can be raised through 30 in. before minimum height is affected. There is sufficient under-clearance for safe travel over rough surfaces and inclines. The larger of the two trucks will ride up a 20 per cent grade when loaded to capacity. The smaller one will climb a 24 per cent grade.

If you write maker identify as IEN - 6706

TRUCK . . Engine driven tractor and attachment units for utility use

Source: MAXIM SILENCER CO.
83-87 Homestead Ave., Dept. TWB, Hartford 1, Conn.

When winter goes

A bulldozer, a lawn mower, a two wheel truck body and a wheel equipped rider's seat are now available for interchangeable application on the tractor portion of the Maxim Model-728 Snow Thrower, previously described IEN-11340-51. Each attachment applies on the engine driven tractor to perform utility duties in plant yard areas.

Two mower assemblies include a three gang unit for 72 in. width capacity and a rotary design for a 37-in. cut. The truck attachment is a half-ton dump design. The bulldozer attachment mounts a 36-in. blade. The tractor employs a Wisconsin engine rating 7½ hp. at 3,000 rpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6707

WRITE YOUR OWN TICKET FOR

Quality Wire!

SPECIFY SENECA FOR WIDE RANGE OF USES

- ☐ Aircraft
- ☐ Armature
- ☐ Cable
- ☐ Car Seal
- ☐ Cotter Pin
- ☐ Curtain Spring
- ☐ Flexible Shaft
- ☐ Glass Netting
- ☐ Hair Pin
- ☐ Lock Spring
- ☐ Piston Ring
- ☐ Plow Steel
- ☐ Ring Traveler
- ☐ Rope
- ☐ Spark Coil
- ☐ Core
- ☐ Spring
- ☐ Stapling
- ☐ Stitching
- ☐ Weaving

Whatever your needs in wire . . . specify SENECA for *top quality* and *uniformity!* High or low carbon steel wire . . . aluminum . . . bronze. Sizes No. 40 W & M (.007) and larger . . . round, half round, oval, square, flat, straightened and cut. Finishes—bright, soft annealed, coppered, liquor, tinned, bright galvanized, oil tempered, enameled. Write about your requirements.

SENECA WIRE & MANUFACTURING COMPANY, FOSTORIA, OHIO
Representatives in practically All Principal Cities

If you write maker identify as IEN - 6708

Drill holes faster ...more accurately WITH A

KELLER AIRFEEDRILL

The Airfeedrill is a fully automatic pneumatic drill that operates through a complete drilling cycle by simply pressing a control valve. It brings big savings in production costs.

- Accurate holes without costly fixtures
- Entirely air-controlled and operated
- Easily shifted from job to job
- Attaches in any position, at any angle
- Pneumatic cycling to speed production
- Drills metal, wood, composition, plastics
- Used in close centers, and in tight places

KELLER TOOLS

Send for **illustrated descriptive bulletin . . . "The Hole Story"**

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 6709

This camera helped Parker strike a hotter spark

Parker Pen Company engineers like a hot spark to light the compressed gas in their new Flaminaire lighter.

Getting a hotter spark meant a study of the split-second action between various kinds of sparking wheels and "flint" materials. Parker did the study with their Kodak High Speed Camera.

This versatile instrument takes up to 3200 pictures a second on 16mm film—slows action as much as 200 times when the films are projected at normal speed on a standard projector. By analyzing the films, Parker engineers and research physicists were able to study spark particle propulsion and ignition phenomena. The result was the design and development of a more efficient and durable lighter mechanism.

If you have a product design or performance problem involving high speed action, high speed movies may show you the answer with less time-consuming cut-and-try experimentation. And, you'll find the Kodak High Speed Camera has a speed range and ease of operation that make it particularly suited to industrial applications. To find out how it has worked for others, send for your copy of our informative booklet. Or, write for details on a sound movie, "Magnifying Time."

Industrial Photographic Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

the Kodak *HIGH SPEED* Camera

Kodak
TRADE MARK

If you write maker identify as **IEN - 6711**

If you write maker identify as **IEN - 6712**

If you write maker identify as **IEN - 6713**

If you write maker identify as **IEN - 6714**

NIBBLING . . Motor driven machine cuts slots, louvers, also beads, folds

Source: NORD INTERNATIONAL CORP.
P. O. Box 44-N69, Denville, N. J.

Cuts to any outline

Model G is a new machine to cut straight or circular slots, to follow irregular outlines, to make louvers and also to bead and fold. The motor driven head is detachable so it can be mounted on frames of various designs for given work.

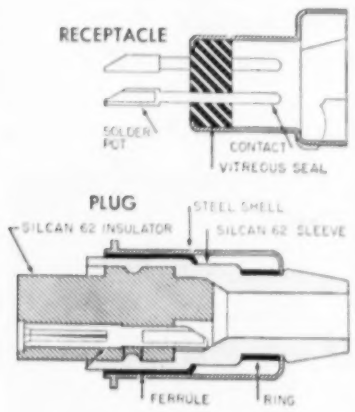
Construction is characterized by the ease with which tools can be changed and by the design of the lower tool holder. It maintains the center line with the upper holder in connection with a "fine" adjustment at a handwheel.

The machine will cut cold rolled steel, in continuous operation, to 3/32 in. in thickness. It will make short cuts in 1/8-in. steel. Throat dimension, in the assembly shown, clears work measuring 28½ inches. Overall dimensions are 50 by 13 by 31½ inches. Drive is by a ¾-hp. motor.

If you write maker identify as **IEN - 6715**

CONNECTOR . . Sub-miniature design, 3, 6 and 12 contacts in steel shell

Source: CANNON ELECTRIC CO.
3203 Humboldt St., Los Angeles 31, Calif.



Ask for Bulletin U-3

Series U designates a new line of connectors for use on miniature sealed and unsealed instrument switches, relays, transformers, amplifiers. Contacts rate 5 amp. with minimum flash-over at 1,700 volts dc. Polarization is provided by a flat top design. Engagement is by a bayonet and "J" slot. The shells are made of steel finished in chromium dipped cadmium plating.

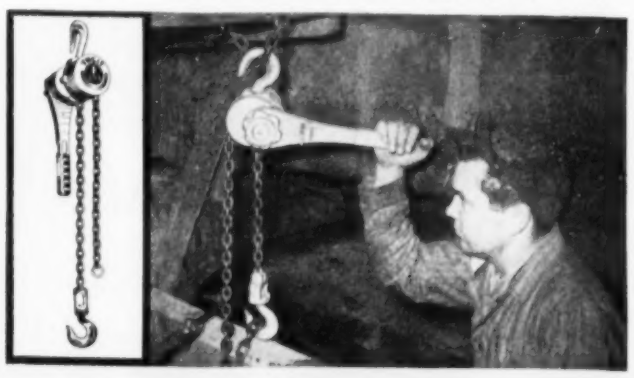
Cable entries of the cord connectors are protected with Silcan No. 62 resilient sleeves to ease the strain on the cable and resist entry of moisture. The plugs are made with Silcan insulator material.

Identify as **IEN - 6716**

$5 will purchase a new Division Lead soldering flux test kit containing fluxes, thinners, residue removers, chemical wire strippers, a total of twenty four items. Included is a chart describing each flux and its applications in soldering some twenty metals. The kit is intended to assist in flux and solder selection for given work.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6717**



SMALL, LIGHT TOOL SPEEDS HEAVY WORK

'TUGIT' is a portable, lever-operated hoist that gives powerful spur-geared efficiency. It lifts, pulls, and stretches at any angle. Action is easy, fast, and smooth. A 1-ton load can be lifted or shifted with a lever pull of only 40 lbs. Control is accurate — loads can be moved as little as 3/32" with the 1-ton size. It's safe to use — has a quick-acting automatic load brake, tough chain, non-fracturing hooks, and non-kicking handle.

'TUGIT' is tool-box size. Every industry has countless uses for it. Whether you want to square a frame, pull a post, stretch cable, or lay pipe, 'Tugit' is a handy hoist to have around. Available in 1 and 2-ton sizes. Your "Shaw-Box" Distributor will gladly give you all the facts — or write for Bulletin 388.

'TUGIT' ® HOISTS

MANNING, MAXWELL & MOORE, INC.
MUSKEGON, MICHIGAN

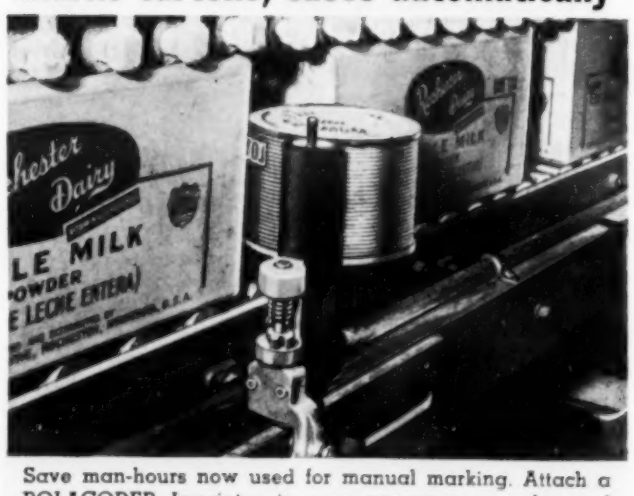
Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial Instruments, and Aircraft Products.

If you write maker identify as **IEN - 6718**

If you write maker identify as **IEN - 6719**

If you write maker identify as **IEN - 6720**

Low-cost conveyor attachment marks cartons, cases automatically



Save man-hours now used for manual marking. Attach a ROLACODER Imprinter to conveyor or case-sealer and eliminate the cost of stencilling or rubber-stamping. Get neater, cleaner, more accurate marking, too. Friction-operated, self-inking. Copy changes made in minutes. *Pays for itself in weeks.*

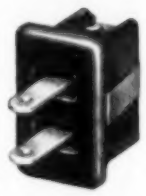
Write for ROLACODER brochure showing models to imprint top, sides of every kind of package.

ADOLPH GOTTSCHO, INC.
Hillside 5, N. J.

Gottscho

If you write maker identify as IEN - 6721

Save Time, Save Money WITH 'DIAMOND H' SNAP-INS



Consistently tops in quality, "Diamond H" snap-in toggle switches, outlets, pilot lights and inter-connecting load plugs are making important contributions to the performance of leading makes of major appliances, electrical housewares, beauty parlor, air conditioning and ventilating equipment and other devices.

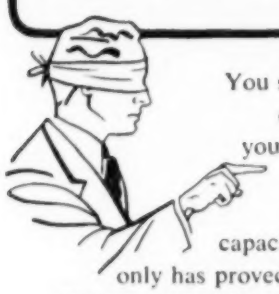
Users like them . . . for their dependability, their appearance *and the man hours they save on assembly lines.* Just snap them into place (wiring up before or after) and spring clips hold them firmly. Wide flanges eliminate need for close tolerances in finishing around installation holes.

Switches, rated 15 and 20 A., 125 V.; 10 A., 250 V., A. C., and also with h.p. ratings. Pilots rated 115 V. or 230 V., A. C. All four devices available in black, white, brown or special color plastic to harmonize with your product. Send us your requirements today. UL Approved.

THE HART MANUFACTURING COMPANY
203 Bartholomew Ave. • Hartford, Conn.

If you write maker identify as IEN - 6722

DON'T BUY BLIND when you *buy ventilators*



You select a ventilator on the basis of performance. *But* how can you be sure it will measure up to the claims made for it? The old practice of basing capacities on horizontal wind effect only has proved to be erroneous. THERE IS ONLY *ONE* SURE GUIDE—and that is *certified* ratings based on tests with wind coming from *any* and *all* directions as shown below. That is your best insurance against down-draft and against false ratings.

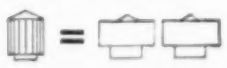
Breidert Air-X-Hausters are *certified* to provide safe, sure ventilation no matter which way the wind blows!

Stationary, no moving parts, nothing to jam or get out of order. It is not necessary to cover Breidert Air-X-Hausters with canvas to prevent drafts during winter or rainy season. The Breidert is the pioneer ventilator to publish certified ratings based on tests* made with wind blowing all directions, as shown at right.

**By Pittsburgh Testing Laboratories*

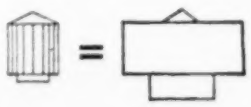
THE BREIDERT AIR-X-HAUSTER DELIVERS BETTER ALL-AROUND RESULTS

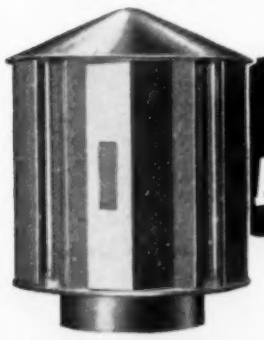
It takes fewer Breiderts to do the job than same size conventional ventilators...



OR

You can use the same number of smaller size Breiderts to do the same job as conventional ventilators.





Breidert Air-X-Hausters

PAT. NO. 2269428

GET ALL THE FACTS! Write today for complete Engineering Data Book, including certified capacity ratings. Address Dept. C.

THE G.C. BREIDERT Co.
3129 SAN FERNANDO ROAD, LOS ANGELES 65, CALIFORNIA
REPRESENTATIVES IN PRINCIPAL CITIES THROUGHOUT THE UNITED STATES

If you write maker identify as IEN - 6724

CUTTING . . Engine driven machine operates a diamond blade to cut concrete

Source: FELKER MFG. CO.
1130 Border St., Torrance, Calif.

$580 at factory

Low cost design features construction of this new Model-135 engine driven machine, previously described IEN-7950-52. The machine assembles on three wheels and employs a 13½-hp. gasoline engine to drive a standard 12-in. diamond blade for cut depth to 3½ inches.

The blade is mounted on a single-end spindle equipped with self-aligning ball bearings. It is protected by a guard and is fed by turning a vertical screw at the operator's position. Coolant is delivered through a connecting hose. Slotted collars pick the coolant up and eject it over both sides of the blade face and rim.

If you write maker identify as IEN - 6725

PROTECTING . . Fabric glove and mitt made of flame proofed fabric

Source: C. WALKER JONES CO.
6133 N. Lambert St., Philadelphia 38, Pa.

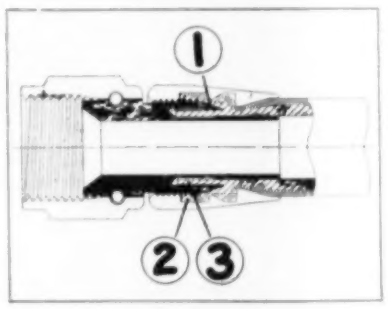
Glove catalog upon request

Bright red fabric is employed to manufacture a new Jomac glove and also a mitt. Both are in plain or lined design for temperatures ranging to 800 deg. F. Both are colored for quick identification to show that the correct glove is being used in a given operation.

If you write maker identify as IEN - 6726

HOSE FITTING . . Threaded connector employs hose tube as a flexible seal

Source: AEROQUIP CORP.
303 S. East Ave., Jackson, Mich.



Tube is not compressed

Little Gem is a new threaded connector equipped with a sharp cutting edge 1 to separate the hose tube from its wire braid when the connector is assembled on a hose end. The cutting action is accompanied by clamping the braid 2 inside the fitting ferrule and by entering the tube 3 into an annular recess. There it provides lip sealing action without being subject to compression. The fitting is available in sizes from ¼ to 2½ inches. Pressure rating is to 200 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6727

If you write maker identify as IEN - 6728

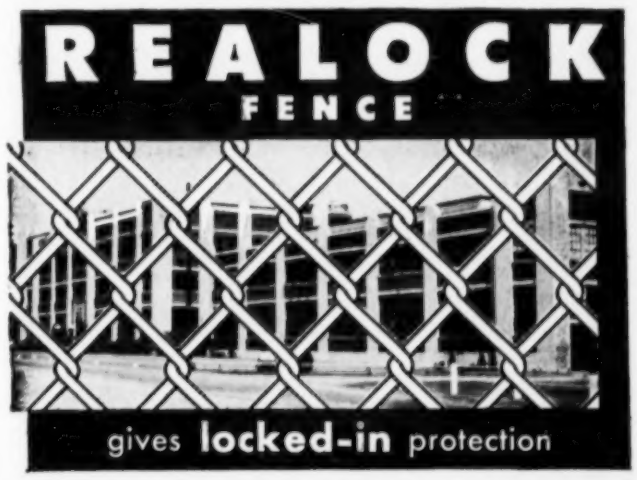
Factory approved motor service in every industrial area from 97 Allis-Chalmers Certified Service Shops

ALLIS-CHALMERS CERTIFIED SERVICE SHOPS are independent service shops which meet rigid standards for ability, experience, equipment and business integrity. They use factory approved methods and parts and do your work promptly at a fair price.

Of course, Allis-Chalmers Certified Service Shops give good service on any electrical equipment, of any make. To find the Certified Service Shops in your area, call your nearby Allis-Chalmers District Office or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3867

ALLIS-CHALMERS

If you write maker identify as IEN - 6729



All fittings on Realock Fence have bolts so placed that nuts cannot be removed from the outside. This means that Realock Fence provides *added protection* for your grounds and property . . . effectively discourages tampering by would-be trespassers.

Strongly constructed, Realock Fence has high resistance to the elements because of a special galvanizing process . . . gives permanent protection and trouble-free service year after year. For additional information write our nearest sales office or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION
BRANCHES IN ALL KEY CITIES

If you write maker identify as IEN - 6730

SAVE TIME AND MATERIALS

Oil-hardened tool steel tapered pin gages accurate to + 0.0001" − 0.0000" insure dependable sizing and location of holes and slots for machinists, set-up men, tool and die men, inspectors, all who need precise hole measurement.

CONCENTRIC TAPER on lower half of each gage fits holes 0.0012" smaller than standard letter, fraction, and number size drill holes. Makes insertion easier. Permits gaging of odd-size holes and slots.

ALL GAGES are 1½ inches long. Sets contain a pair of each size in a plastic case with 4-place decimal equivalents of each size plainly marked.

ALL ITEMS STOCKED FOR IMMEDIATE DELIVERY

THE Horberg GAGE COMPANY
31 STAPLES ST., BRIDGEPORT, CONN.

Quantity
..... Letter sets @ $45. 52 gages (A-Z)
..... Fraction Sets @ $50. 60 gages (1/64" to 1/2" in 1/64" steps)
..... Number Sets @ $90. 120 gages (1 to 60)
..... Single gages @ $ 1.
..... Stand alone @ $10.

Please Rush checked items and literature to
company .....
address .....
name .....
title .....

If you write maker identify as IEN - 6731

HOW TO SAVE MONEY ON

STEEL SHELVING

The real cost of shelving is the erected cost

That's why highest quality DeLuxe shelving costs you less. DeLuxe precision shelving has *fewer parts*, uses *80% less bolts* and is the *only shelving* available that is *100% adjustable*. It's quicker, less costly to install—easier to adjust.

Wherever you are, a DeLuxe factory representative is available to give you a complete engineering, planning and layout service without obligation.

Write for a free catalog now, while your mind is on shelving.

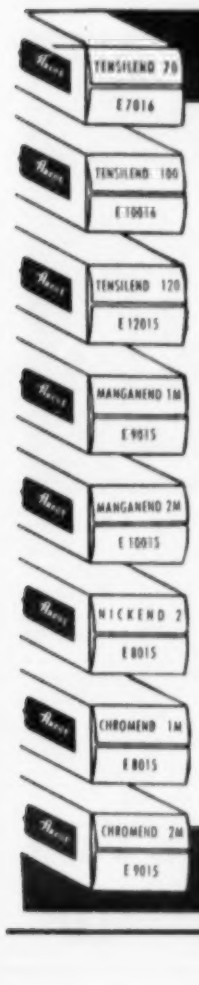
DELUXE METAL FURNITURE CO.
303 Struthers St., Warren, Pa.

DeLuxe

For over 25 Years Manufacturers of.
Storage Shelving • Library Shelving • Storage Cabinets • Shop Equipment

If you write maker identify as IEN - 6732

Available For Your Use...



Practical, Fact-Filled Data Sheets give complete information on every grade of Arcos Low Hydrogen electrodes listed...*applications, weld metal analysis, mechanical properties, welding characteristics.* Write today for the Data Sheets that will guide you in the selection of the "right" electrode to produce sound high quality weld metal.

ARCOS CORPORATION
1500 South 50th St., Philadelphia 43, Pa.

If you write maker identify as IEN - 6733

EXPERIENCE SINCE 1894

Built into

American Beauty

ELECTRIC SOLDERING IRONS

FOR MORE YEARS OF EFFICIENCY

Since 1894 these electric soldering irons have demonstrated their efficiency and durability . . . Manufacturing plants, service, maintenance and repair shops choose them for their durability and efficiency.

TEMPERATURE REGULATING STAND

A thermostatically controlled device for maintaining an electric soldering iron at any desired heat while at rest. Adjustable from low or warm to full working temperature.

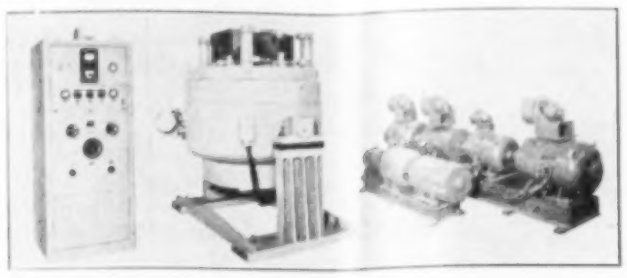
No. 117-2 Write for Literature

AMERICAN ELECTRICAL HEATER COMPANY
DETROIT 2, MICHIGAN

If you write maker identify as IEN - 6734

TESTING . . Vibrating machine rates force output to 10,000 pounds

Source: M B MFG. CO.
1064 State St., New Haven 11, Conn.



Shakes to prove sound construction

Model C-100 is a new machine in the line of electric vibrating equipment previously described IEN-686-52. Operating range is 5 to 500 cps. with maximum excursion at ½ in. and force output to 10,000 pounds. Trunnion mounting permits adjustment for vertical to horizontal operation. The work table is supported on forged steel flexures that assure straight line motion.

The drive equipment includes three alternators, a 50-hp. ac. motor, a dc. generator, dc. field exciter and a dc. motor. Interlocking controls prevent mis-starting or mis-operation.

If you write maker identify as IEN - 6735

SCREWDRIVING . . Electric tool combined with a balancing retriever

Source: MALL TOOL CO.
7725 S. Chicago Ave., Chicago 19, Ill.

Promotes fast action

Model ES10 screwdriver and a Mall balancing retriever make a new combination for use in production lines. The screwdriver is powered by a 110-volt universal ball bearing motor. It can be specified for operation on 220 volts. The control switch is lever type and is held to operate the spindle. The driving clutch engages when pressure is applied. A knurled ring can be turned for reverse action.

Free speed is 1,200 rpm. Disengaging torque can be set by adjusting spring pressure. The tool has capacity for a self-tapping No. 10 machine screw or for a standard ¼-in. machine screw. A 10-ft. rubber covered cord and plug are standard equipment.

The balancer carries a 15-ft. wire rope on a reel that can be adjusted for tension. The reel is mounted on oilless bearings. Retrieving capacity is for tools weighing 10 lb. or less.

Identify as IEN - 6736

Fluoroscope images are made 1,000 times brighter than they have been by application of a new X-ray image amplifier. The new device permits reduction in X-ray intensity to prevent damage to human tissues and still produce a bright clear image. North American Philips Company supplies it.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6737

If you write maker identify as IEN - 6738

Write for New 16 Page Catalog

ONE MILLION RELAYS

Over 1000 Types

24 HOUR DELIVERY FROM OUR STOCK!

- Standard, Respected Brands
- Brand New, Boxed
- Inspected and Guaranteed
- Priced to Your Advantage

Our relay stock, which is the world's largest, has been carefully built up over a period of several years. Nothing but first run, professionally selected items are carried.

Send us your relay requirements. You will receive immediate quotations.

samples on request. *Phone, Wire or Write*

Relay Sales

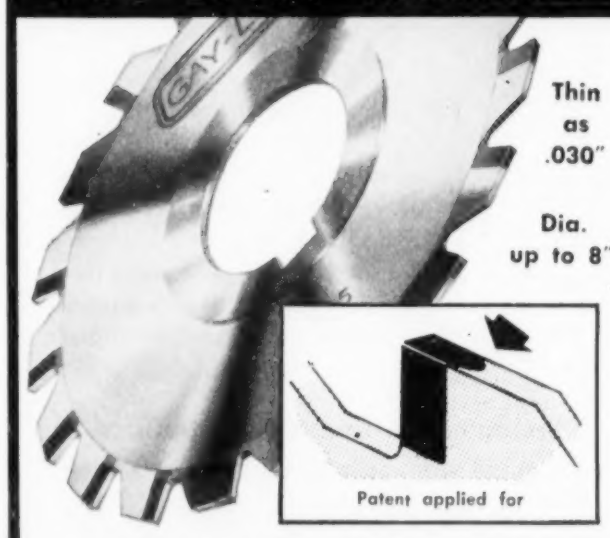
SEeley 8-4146
4721 W. MADISON STREET
DEPT. NO. 9 CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 6739

CARBIDE TIPPED

THINSAW

FOR EVERY INDUSTRY



CIRCULAR SEAT GIVES GREATER BRAZE AREA—BETTER TIP SUPPORT

This exclusive Gay-Lee carbide tipped saw design has completely changed the slitting, slotting and sawing picture. Now carbide tips stay in and run-out is eliminated. You get the full benefit of carbide's faster cutting ability.

WHAT IS YOUR SAW PROBLEM?

We are specialists in carbide saw design and manufacture. We have solved some tough jobs and some big ones. Can we help you?

Hub Saw Thinsaw Small Saw

Carbide teeth profile ground on Special Order

WRITE FOR DATA

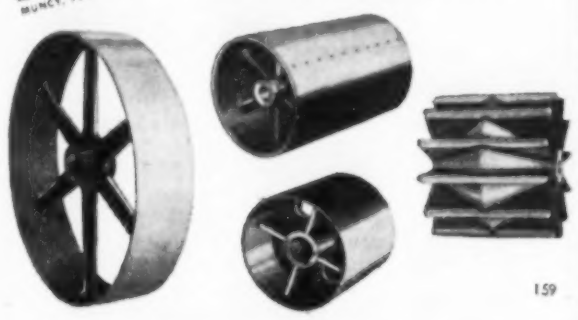
GAY-LEE COMPANY
CLAWSON • MICHIGAN

If you write maker identify as IEN - 6741

PULLEYS

SPROUT WALDRON S/W MUNCY, PENNSYLVANIA

SOLID FACE and BELT SAVER



In handling rough, abrasive materials, S/W exclusive Belt Saver Pulleys are lengthening belt life as much as 400%. Equally well recognized is the S/W Blue Face Pulley Line in standard and made-to-order types and sizes. Write today for literature.

Sprout-Waldron & Co., Inc.,
5 Logan Street, Muncy, Penna.

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

If you write maker identify as IEN - 6742

NEW

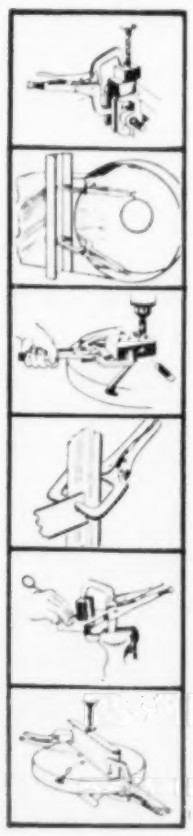
Quick-Locking C-Clamp BY VISE-GRIP

LOCKS To Work By A Squeeze Of Your Hand!

No. 11, 11" $2.95

Now!

Hundreds of New Applications!



Look at these applications! All with a C-Clamp that adjusts to the RIGHT opening before use, then clamps to the work by the squeeze of your hand! *Locks* with *tremendous grip*. Offers all industry a speedier lock-on clamp for those *tough* jobs: You simply hold work with one hand, apply clamp with the other.

Clamps angle iron, I-beams, close-quarter work in a jiffy. Really *holds*. End screw provides quick, easy jaw adjustment. If desired, jaw tips can be formed and adapted for any specialized job — such as welding on wider lips, etc. Jaw adjustment 0" to 3¾".

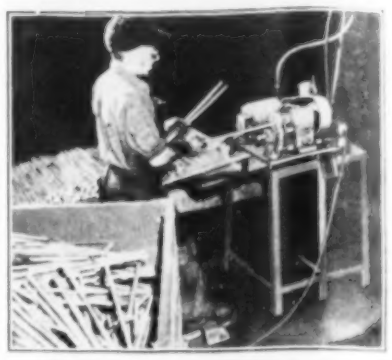
WRITE for descriptive literature showing unlimited uses, full details, on this new-type C-Clamp.

PETERSEN MFG. CO.
Dept. IE-6
DE WITT, NEBRASKA
Sold By Your VISE-GRIP Supplier

If you write maker identify as IEN - 6744

BURRING . . Rotating cutter machine for tube, rod, also flares, points

Source: PINES ENGINEERING CO.
638 Walnut St., Aurora, Ill.



Operator loads and unloads

An air cylinder with electric foot control has been added to the rotary machine, previously described IEN-5551-48, for a production pointing operation. The machine handles work previously pointed on a threading lathe with a reduction in direct labor costs from 51 to 23 cents per 100 pieces. The piece measures ⅝ in. in diameter and is made of steel rod. Typical set up is illustrated.

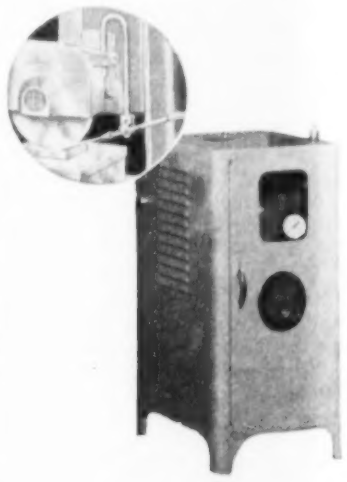
A self-centering vise, to the left of the motor driven cutter head spindle, takes work to 2 in. in diameter. The work is inserted against a stop and the operator depresses the foot control to start the automatic clamp and feed cycle. The work feeds to the rotating cutter which is held in the main spindle back of the chuck jaws. When the pointing operation is complete, the chuck returns the work piece and releases it.

The operator is free to handle the work in loading and unloading. An adjustable stop screw controls the forward movement and depth of cut. Drive is by a ½-hp. motor and two-step V-belt sheave for 8 speeds between 760 and 3,920 rpm.

If you write maker identify as IEN - 6745

LUBRICATING . . Coolant sprayer delivers fine mist to a grinding wheel

Source: REID BROTHERS CO.
138-42 Elliott St., Beverly, Mass.



Proved in service

Heat is conducted away from work being ground and the grinding action, particularly in connection with tool making, is assisted by application of this new portable Cool Grinding Attachment. Dust is eliminated. The work remains clearly visible. No splash guards are required. Addition of a rust inhibitor to the standard water soluble coolant prevents work tarnishing.

The assembly encloses an air compressor driven by a ¼-hp. motor operating on 110-volt 60 cycle ac. and a ½-gal. reservoir for the coolant. Delivery is through an adjustable nozzle that can be directed at the wheel and the work. Excess spray evaporates. Mounting is on wheels for portable application between various machines. Overall dimensions are 16 by 16 by 32 in. for the equipment.

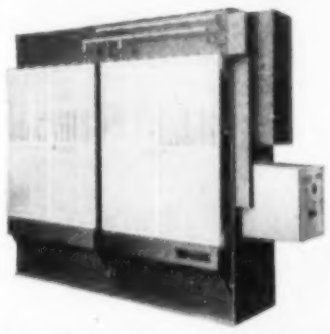
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6746

If you write maker identify as IEN - 6747

50 MILLION CFM of Super-Clean Air . . . by Electro-MATIC

ELECTRO-MATIC* electronic precipitators now installed in the U.S. furnish this huge volume of *super-clean* air for industry, business, public buildings and institutions. Widely recognized for superior performance and economical maintenance, AAF's ELECTRO-MATIC provides highest efficiency collection (from smoke to largest air-borne material) . . . combined with fully automatic operation and self-cleaning features. Unit construction in many sizes readily adapts this filter to most air volume requirements. Request full information from your nearby AAF representative or write for Engineering Bulletin No. 250-E.



**ELECTRO-MATIC Automatic electronic precipitator.*

Today's Best Buy is Better Air!

American Air Filter
COMPANY, INC.
335 CENTRAL AVENUE, LOUISVILLE 8, KY.
AMERICAN AIR FILTER OF CANADA, LTD., MONTREAL, P. Q.

If you write maker identify as IEN - 6748

M·S·A ChemKlos . . .

NEW SERVICEABLE GRAY COLOR

- Made of acid and caustic resistant Dynel
- Special abrasion resistant weave
- Comfort tailoring at every point

From collar to trouser bottom, M.S.A. ChemKlos have the construction and fabric features that answer industry's demands for longer-wearing, smarter-looking, comfortable work clothes. Made throughout of Dynel, the new fiber that resists acids and caustics, and loomed in a special weave that gives improved abrasion resistance, M.S.A. CHEMKLOS WEAR ON WHEN OTHER WORK CLOTHES WEAR OUT. Sturdy bar tacking, double and triple stitching, tough plastic acid and caustic resistant buttons, and many other construction features add to durability and comfort. Available in shirts, trousers and coveralls. Write for details.

MSA SAFETY EQUIPMENT HEADQUARTERS

Call the M.S.A. man on your every safety problem . . . his job is to help you.

MINE SAFETY APPLIANCES CO.
Braddock, Thomas and Meade Sts.
Pittsburgh 8, Pa.
At Your Service
72 Branch Offices in the United States

If you write maker identify as IEN - 6749

MAXAW 800 magic pivot does it!

HEAVY DUTY—ALL BALL AND ROLLER BEARING—INDUSTRIAL QUALITY

$89.50

Out-performs saws selling up to $145!

Here's the saw that bears down with that *extra cushion* of power and sings through the tougher cutting jobs in maintenance and industrial sawing. Cuts full 2-in. rough or semi-dressed lumber *with blade to spare*—2¾" on a straight cut, and 2 9/32" on a 45° bevel. **magic • pivot** does it!

And **magic • pivot** cuts down saw weight . . . MAXAW 800 weighs only 14 lbs.—⅓ less than conventional 8-in. saws . . . puts less handicap on men and muscles. Get all the facts—do more—save more—with **magic • pivot** MAXAW 800!

Free Pamphlet! — Find out what **magic • pivot** can do for you. Send for Pamphlet I-63.

Cummins-Chicago Corp.
DIVISIONS:
Cummins INDUSTRIALS • Cummins Portable Tools
4740 N. Ravenswood Ave. • Chicago 40, Illinois
IN CANADA: 334 Sandar Ave., Toronto

If you write maker identify as **IEN - 6750**

this time-study saves you money!

BUSINESSES SAVE HOURS EACH DAY

you save 16 seconds every time you press a button

Actual time studies taken in hundreds of businesses show that an average of 18 seconds is required to make an "inside" speech contact through the switchboard. With *your own* AMPLICALL "clear line" *internal* communication system—you get *2-second speech contact* within and between departments. AMPLICALL frees busy switchboards for important outside calls—keeps personnel *on the job*, keeps talk terse—saves hours each day for the average business. AMPLICALL saves you money—pays for itself. There is a system to fit your special needs. Get the full facts today!

SEE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

ELECTRONIC **AMPLICALL** INTERCOMMUNICATION

RAULAND-BORG CORPORATION
3523-K Addison Street, Chicago 19, Illinois

If you write maker identify as **IEN - 6751**

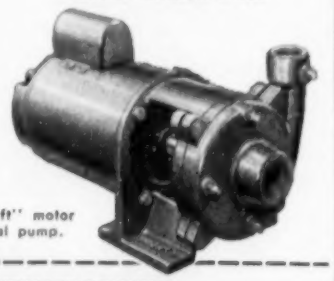
New Myers "Centri-Thrift" General Purpose Pump

An addition to present line of centrifugal pumps

Special low cost, centrifugal pump for bottle washers, booster service, air conditioners, boiler feed service, etc. Myers quality features: Removable, replaceable bronze wearing ring; separate stainless steel pump shaft extended through open bracket for quick inspection and accessability. Bronze impeller is locked to shaft.

Myers "Centri-Thrift" V-belt driven centrifugal pump.

Capacity to 50 gallons per minute. Heads up to 92 feet. Easily handles 180° water. Suction opening 1¼" pipe; discharge opening 1" pipe and can be rotated in any of four positions.



Myers "Centri-Thrift" motor mounted centrifugal pump.

MYERS

IMMEDIATE DELIVERY
Write for complete information and prices.
THE F. E. MYERS & BRO. CO.
238 Fourth St., Ashland, Ohio

If you write maker identify as **IEN - 6752**

How to solve 39 PRODUCTION PROBLEMS with Mead Air Devices

Ready!

SEE how to use standard Mead units to make automatic or semi-automatic machines!

New 16-page photo-booklet shows how typical production problems were solved. Alert production men will readily adapt the ideas to their own needs.

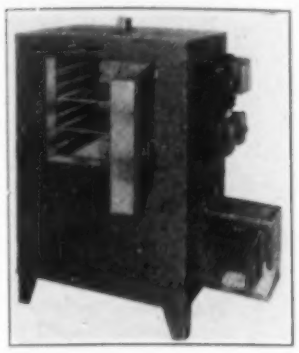
Write for NEW "BOOKLET 39" *Now!*

MEAD SPECIALTIES CO., Dept. EA-63, 4114 N. Knox Ave., Chicago 41, Ill.

If you write maker identify as **IEN - 6753**

HEATING . . Electric oven circulates heated air, 650, 850 deg. F.

Source: GRIEVE-HENDRY CO.
1813-17 W. Lake St., Chicago 12, Ill.



For shop or laboratory

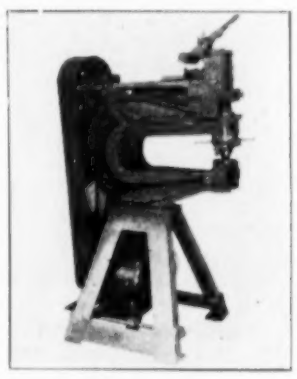
Series H for horizontal air circulation and Series V, in which the air moves vertically through the work chamber, are both available in this new line of electric ovens. Air handling capacity ranges from 400 to 1,200 cfm. with heat input at 6 to 20 kw. to maintain temperatures maximum at 650 and 850 deg. F. Smallest unit in the line provides a work space measuring 20 by 20 by 20 inches. The largest measures 26 by 38 by 50 inches. Operation can be specified on 220 or 440-volt 3-phase 60-cycle ac. List ranges from $545 to $1,777.

Construction includes Inconel sheathed heating elements, indicating temperature control, manual interlock for heat turn-off in case of blower motor failure, high and low heat switch, adjustable air flow, adjustable positive exhaust and intake. The housing is made of 18 and 20-gage steel in reinforced welded assembly. Mounting is on 6-in. legs. Safety door latches are standard equipment.

If you write maker identify as **IEN - 6754**

NIBBLING . . Turret head machine cuts slots, shears, also beads, folds

Source: TABOR MFG. CO.
6223-27 Tacony St., Philadelphia 35, Pa.



Bulletin PG-1

New design, in the turret head of the Gray line of nibbling machines, permits the operator to turn the tool for feed in any direction so he does not have to turn the work to follow an irregular outline. The line includes eleven sizes with throat ranging from 24 to 48 in. and capacity in mild steel from 3/16 to ⅞ inch. The smallest machine requires a ½-hp. motor. The largest one operates with a 7½-hp. motor.

The No. 3 machine, shown in the illustration, operates at 450 to 900 strokes per minute. Stroke length is between ¼ and 7/16 inch. Cutting speed is 25 to 48 in. per minute. Capacity in mild steel is ¼ inch. The company has prepared an illustrated 12-page bulletin providing specifications and attachments.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Additional product information in New Literature reviews—page 78

If you write maker identify as **IEN - 6755**

He's Wiping His Glasses With YOUR Dollars

$ $ $ $ $

Sweat begins to trickle on to his glasses. He stops . . . takes off his glasses . . . pulls out a handkerchief . . . wipes his glasses . . . replaces the handkerchief . . . puts his glasses back on . . . and finally resumes his job.

That little episode costs you money. When it's repeated hour after hour, day after day, week after week, month after month by dozens of workers, the dollar loss to you is a fantastic sum.

Stop this wiping of glasses with your dollar bills. Use StaSafe Koolpads—the lightweight, low cost, cellulose headband that soaks up sweat and keeps those dollars in your pocket.

$4.00 For a Package of 25

STANDARD SAFETY EQUIPMENT COMPANY
232 W. Ontario St. Chicago 10, Ill.

If you write maker identify as **IEN - 6756**

NON-WELDING ARC-RESISTANT NON-FILMING

Electrical Contacts

Have a job where ordinary electric contacts lose efficiency or wear out quickly because of arcing, welding or filming? Then try Stackpole carbon-graphite plus refractory metal contacts. Used in combination with silver or copper, carbon-graphite contacts are highly effective in practically every contact application—from circuit breakers to relays to Diesel starting switches. Send details of your original equipment for recommendation by Stackpole contact specialists.

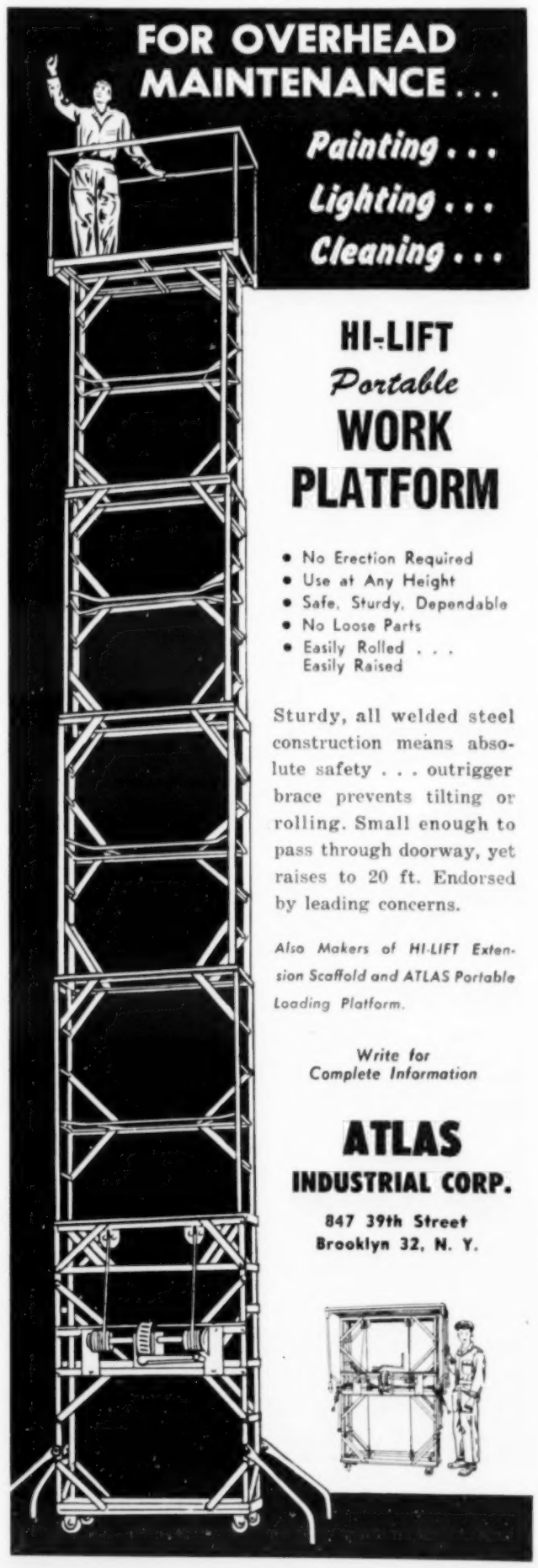
STACKPOLE

STACKPOLE CARBON CO., St. Marys, Pa.
"Everything in Carbon but Diamonds"

If you write maker identify as **IEN - 6757**

FOR OVERHEAD MAINTENANCE . . .

Painting . . .
Lighting . . .
Cleaning . . .



HI-LIFT *Portable* WORK PLATFORM

- No Erection Required
- Use at Any Height
- Safe, Sturdy, Dependable
- No Loose Parts
- Easily Rolled . . . Easily Raised

Sturdy, all welded steel construction means absolute safety . . . outrigger brace prevents tilting or rolling. Small enough to pass through doorway, yet raises to 20 ft. Endorsed by leading concerns.

Also Makers of HI-LIFT Extension Scaffold and ATLAS Portable Loading Platform.

Write for Complete Information

ATLAS INDUSTRIAL CORP.
847 39th Street
Brooklyn 32, N. Y.

If you write maker identify as IEN - 6759

INDUSTRIAL buyers have learned to depend on ANTI-CORROSIVE for fast, dependable service on all types of stainless steel fastenings. Draw on our IN STOCK inventory of more than 7,000 items and sizes and a production capacity geared to produce precision fastenings in large or small quantities, from huge ⅞" hexagon head bolts to tiny #0-80 machine screw nuts.

Write for Catalog 53V today.

anti-corrosive metal products co., inc.
castleton-on-hudson, new york

If you write maker identify as IEN - 6760

IF IT'S GEARING YOU'RE HEARING ..TRY CELORON

A Celoron gear is a silent gear. It eliminates metal-to-metal contact . . . builds silence into your products.

There is a difference in plastic gear stock. Celoron is a special canvas-based laminate made by C-D-F, sold in 39" x 46" sheets, with thicknesses up to 9". Celoron is easily cut into gears of high tooth strength, excellent impact strength and resiliency. These gears require little lubrication and are unaffected by high heat or moisture.

Write for Celoron specifications and gear cutting information. If you wish a sample, tell us about your application.

THE NAME TO REMEMBER...CELORON GEAR STOCK

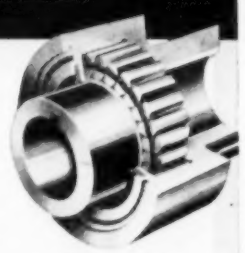
Continental-Diamond Fibre Company
NEWARK 21, DELAWARE

If you write maker identify as IEN - 6761

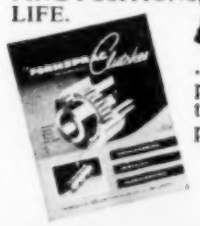
THE FULL COMPLEMENT SPRAG-TYPE CLUTCH

DESIGN ENGINEERS EVERYWHERE ARE SPECIFYING IT

Designers of equipment using over-running clutches are specifying Formsprag Clutches. Because: They've found out what a sprag is . . . What Full Complement means . . . Why that principle provides MAXIMUM TORQUE CAPACITY (for size and weight), INFINITE NUMBER OF GRIPPING POSITIONS, LONGER LIFE.



OVER-RUNNING
INDEXING (Feeding)
BACKSTOPPING



FOR YOUR FILES

. . . all the answers on the above plus engineering data, applications, etc. Write for this new 10-page illustrated brochure today.

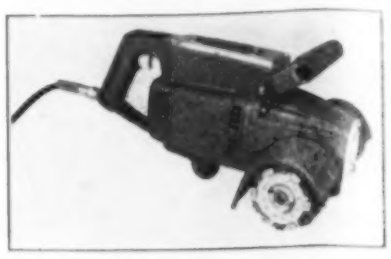
FORMSPRAG COMPANY
23591 HOOVER ROAD
Van Dyke, Michigan

FULL COMPLEMENT **FORMSPRAG** *Clutches* DISTRIBUTORS IN PRINCIPAL CITIES

If you write maker identify as IEN - 6762

CLEANING . . Rotary chipping tool removes rust, paint, scale, cement

Source: G. H. TENNANT CO.
2574 N. 2nd St., Minneapolis 11, Minn.



The electric model

Hard accumulations can be cut quickly from decks, floors, steel girders, tanks, barrels, pipe lines, walls, table tops by application of this new Hand Revo-Tool. It is available with a pneumatic or ¾-hp. electric motor operating at 12,000 rpm. It produces 3,400 cutting impacts per second with the 2¼-in. hardened steel cutters. These cutters are assembled in two groups, each 2 in. in width, on the sides of the central drive.

Cutting depth is controlled by an adjustable shoe. The cutters are covered by steel hoods. The bearings are sealed. Weight of the pneumatic tool is 16 lb. and length is 14½ inches. The electric assembly weighs 24½ lb. and measures 16 inches. List price are $245 and $195.

If you write maker identify as IEN - 6763

CORROSION PROOFING . . Plastic for strippable coat on metal products

Source: ADHESIVE PRODUCTS CORP.
1662 Boone Ave., New York 60, N. Y.

50 cents per pound

Plastic Peel No. 3601 is a new hot dip strippable coating to protect finished machined parts during processing, storage and shipping. The material is supplied in solid form. It is heated to 190 deg. C. and the work is dipped into it for about 5 seconds. The film dries to provide a protective covering that can be removed with the aid of a sharp stick.

If you write maker identify as IEN - 6764

PROTECTING . . Safety hat, light weight, moisture proof plastic

Source: WILLSON PRODUCTS INC.
217 Washington St., Reading, Pa.

Stops the bumps

Super-Tough is a new safety hat molded in one piece of plastic that is resistant to attack by industrial acids, caustics, solutions. It meets the required tests for impact resistance, pierce resistance, dielectric strength. Two styles are fitted with vinyl head gear attached at six suspension points molded into the interior so no rivets or lacing pierce the hat itself.

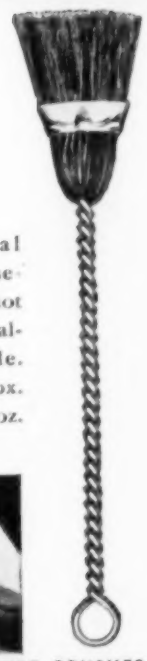
The head gear can be changed quickly. The adjusting strap is marked for various head sizes. Clearance between the hat shell and the wearer's head provides a margin of safety and permits air circulation for comfort. Standard color is green. Red, yellow, brown, white can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6765

Mechanic's Chip Brush

- Improved Design
- More Efficient
- Longer Lived
- Acid Resistant
- Alkali Resistant
- Lower Priced



● Genuine natural horsehair bristles securely locked, cannot pull out. 12 gauge galvanized wire handle. Packed 2 doz. per box. Price, $3.00 per doz. F.O.B. Rockford.

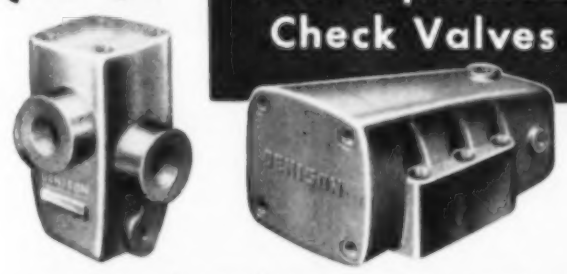
CLEANING T-SLOTS
APPLYING COOLANT
WRITE FOR CATALOG SHEET

STANDARD AND SPECIAL TWISTED-IN-WIRE BRUSHES
-ONE BRUSH OR A CARLOAD-

SEE YOUR MILL SUPPLY DEALER OR WRITE
Biltwell Brush Co.
225 S. CHURCH ST. • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 6766

NEW DENISON Pilot Operated Check Valves



4 models, ½" to 1½" sizes . . . 3000 psi maximum
Standard Subplate or Threaded Body Types

Another milestone in Denison's continuing research in oil-hydraulic equipment! New pilot-operated HydrOILic Check Valves, compactly built for circuits operating at pressures to 3000 psi. Improved, simplified design. Replaceable valve seats add to maintenance economy. Capacities to 50 gpm. ½", ¾", 1¼" and 1½" sizes. Standard subplate or threaded body types. Let us send you complete details on Denison HydrOILic Check Valves. . . Write today.

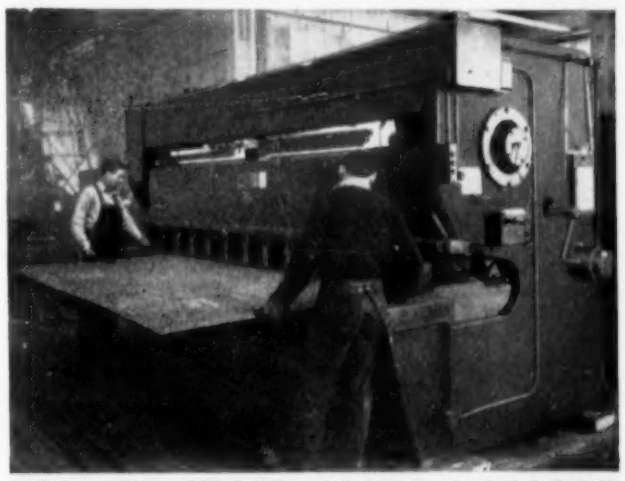
"The Finest Money Can Buy!"

A COMPLETE LINE OF PUMPS, PUMPING UNITS, FLUID MOTORS, CONTROLS

DENISON HydrOILics

The **DENISON** Engineering Company
1150 Dublin Rd.
Columbus 16, Ohio

If you write maker identify as IEN - 6767



KNIVES STAY SHARP LONGER

Knives on the Steelweld Shear above were practically as sharp as new, after months of continuous operation, 8 hours a day, 6 days a week. Cut pieces were burrless, straight and true.
Long knife wear is the result of important features built into Steelweld Shears, such as solid one-piece frame, pivoted blade and easy knife adjustment.
For better, faster, easier shearing get the facts on Steelweld Shears. For all plate up to 18'-0" long or 1¼" thick.

Send for free copy of catalog No. 2011.

THE CLEVELAND CRANE & ENGINEERING CO.
4222 East 282nd St., Wickliffe, O.

STEELWELD SHEARS

If you write maker identify as IEN - 6768

There's NO Tail Swing with HYSTAWAY!

Because there's no tail swing—this Hystaway Dragline makes possible digging close to railroad car without disrupting traffic. Mounts on Caterpillar Diesel Tractors.

...and that makes possible digging in closer quarters

Hystaway can dig in close quarters, right up against walls, fixed obstructions—in places where it is impossible to dig with other revolving shovels which must have room to swing superstructure. In addition, with Hystaway you can excavate and *bulldoze* with one machine! Only Hystaway gives you seven money-saving machines in one! See your Caterpillar-Hyster Dealer or write for Catalog 1235 to:

HYSTER COMPANY
2916 N. E. Clackamas St.
Portland 8, Oregon
1816 N. Adams, Peoria 1, Illinois

THERE'S PROFIT IN **HYSTER POWER** HYSTER

If you write maker identify as IEN - 6769

What is this 13-in-1 material?

It's heat resistant or heat absorbing or heat insulating, electrically nonconductive or conductive, flat or curved, transparent or translucent or opaque, patterned or plain. It's Libbey·Owens·Ford *Glass* and the new 1953 book you see here suggests many ways you can use glass to replace costlier materials in your products or production system. Send for your *free copy* of PD-53 today.

Libbey·Owens·Ford Glass Company, 9463 Nicholas Building, Toledo 3, Ohio.

LOF GLASS · PLASKON · FIBER-GLASS

LIBBEY · OWENS · FORD GLASS COMPANY

If you write maker identify as IEN - 6770

Roth Rubber Supplies Pads for All National Sanders...

National Model 100—equipped with Natural Sponge Rubber Pad by Roth.

National Model 300A—equipped with two Neoprene Sponge Rubber Pads by Roth.

Request Roth's Counsel—NOW!

Get Roth technical assistance without obligation. We'll be glad to help you solve your rubber problem. Write or mail coupon today.

Rubber parts supplied by Roth are on every sanding machine made by National Air Sander, Inc., Rockford, Ill., since 1941. We help National specify the *right* rubber for every part and purpose.

What's YOUR rubber problem? Roth Rubber can help you, too.

Custom Manufacturers of Industrial Rubber Products since 1923

ROTH RUBBER COMPANY

1856 S. 54th Avenue, Chicago 50

If you write maker identify as IEN - 6771

D.O.James

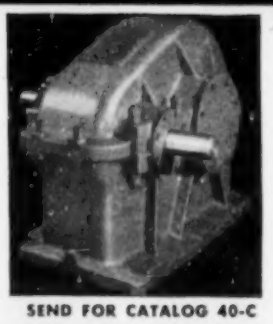
Established 1888

Continuous-tooth

HERRINGBONE GEAR SPEED REDUCERS

The Gear With the Backbone

The operating efficiency and dependability of these reducers is continuous testimony to their design and inbuilt qualities of manufacture. They are made in single, double and triple reductions — come in many sizes and in a wide ratio and horsepower range.



SEND FOR CATALOG 40-C

D. O. JAMES GEAR MANUFACTURING CO.

1140 WEST MONROE STREET • CHICAGO 7, ILLINOIS

If you write maker identify as IEN - 6772

ELEVATOR . . Engine driven unit to load and unload a flat bed truck

Source: BUILDERS EQUIPMENT CO. 4010-14 N. Central Ave., Phoenix 2, Ariz.

For blocks, bags, barrels, equipment

Superlite Unloader is a new engine driven hydraulic elevator. It rides a track and hinged extension on the bed and over the rear of a flat bed truck. It lifts a 3-ton load from the ground and rides it on the track to deposit it on the truck. It lifts the same load from the truck to the ground at a point of delivery.

Movement on the truck bed is by hydraulic drive and chain connection to the rear elevator wheels. Weight of the structural elevator assembly, with its 7½-hp. engine and hydraulic equipment, is about 1,500 pounds. The elevator will unload twelve cubes of building blocks in twenty minutes.

If you write maker identify as IEN - 6773

PROTECTING . . Safety hat made of molded non-conducting plastic

Source: MINE SAFETY APPLIANCES CO. 21 Braddock Ave., Pittsburgh 8, Pa.

Impervious to oil, grease, chemicals

Shockgard employs a plastic material that insulates against electrical shock to 10,000 volts in a temperature range from minus 30 to plus 175 deg. F. The hat also is crack-proof and shatter-proof. It is rounded to deflect falling objects. An adjustable replaceable lining is included. It weighs 14 ounces.

Identify as IEN - 6774

Yale & Towne Manufacturing Company has presented the fire department in Philadelphia with a new engine driven fork lift truck. Idea is to teach truck operation to firemen who have to fight warehouse blazes. The knowledge permits them to use trucks in the warehouse to clear obstructions in the path to the fire so they can get at it quickly. One of the company's truck experts will conduct classes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6775

MEYERCORD *Nameplate* DECALS

Laboratory Engineered

FOR EVERY SURFACE AND FINISH

Meyercord Decal Engineers and Designers Can Help You Lick that Tough Problem

If you want to ADVERTISE . . . INSTRUCT . . . or IDENTIFY on any surface from smooth, non-porous plastics to rough, pebbly materials, Meyercord engineers will come up with the answer in a hurry. We dipped into our recent orders and highlight below a few "case histories" where Meyercord Decals have been engineered for extremely difficult conditions:

AIRCRAFT INDUSTRY—Meyercord engineers developed a special identification decal for jet aircraft capable of withstanding temperatures to 900° as well as the effects of aeromatic fuels and hydraulic fluids.

ELECTRONICS INDUSTRY—A leading electronics manufacturer required a schematic diagram which could be folded compactly and placed inside communication sets. Meyercord solved the problem with a special decal applied to nylon fabric under heat and pressure.

HOME APPLIANCES—Meyercord engineers developed a new type of open-letter decal providing high color and dramatic effect—at less than one third the cost of discarded metal name plates.

MEYERCORD DECAL NAMEPLATE MANUAL and Full Information FREE

Meyercord "Mark-it" Manual shows hundreds of uses for durable, washable, decal nameplates . . . as trade marks, instructions, charts or diagrams . . . This manual is FREE . . . but request it on company letterhead, please.

THE MEYERCORD CO.

World's Largest Decalcomania Manufacturers

DEPT. F-315 5323 WEST LAKE ST. CHICAGO 44, ILLINOIS

If you write maker identify as IEN - 6776

New Low Prices ON AIRCO WELDING WIRE

for the Aircomatic® and other inert-gas-shielded arc welding processes

Consumable, spooled wire — stainless, copper-base alloy and aluminum — now at new low prices. The following sizes are immediately available:

Airco ALUMINUM	3/64", 1/16", 3/32", 1/8" dia.
Airco STAINLESS	.035", .045", 1/16", 3/32" dia.
Airco COPPER-BASE ALLOYS	.035", .045", 1/16", 3/32" dia.

For complete price list and table of all Airco wires, including chemical analyses, gauges, lengths and stock numbers, call your nearest Airco office, or write Dept 17 IEN Air Reduction Sales Company, 60 East 42nd Street, New York 17.

Specify Airco wire for —

- **Controlled, uniform chemical analysis**
- **Highest possible standards of surface finish, cleanliness and straightness**
- **Careful spooling that assures smooth, uninterrupted wire feed.**

AIRCO®

AIR REDUCTION

60 East 42nd Street • New York 17, N. Y.

Air Reduction Sales Co. • Air Reduction Magnolia Co. • Air Reduction Pacific Co.

Represented Internationally by Airco Co. International *Divisions of Air Reduction Company, Incorporated Dealers and Offices in Most Principal Cities*

AT THE FRONTIERS OF PROGRESS YOU'LL FIND . . .

AN AIR REDUCTION PRODUCT

If you write maker identify as IEN - 6777

NONE BETTER . . . *America's First and Safest*

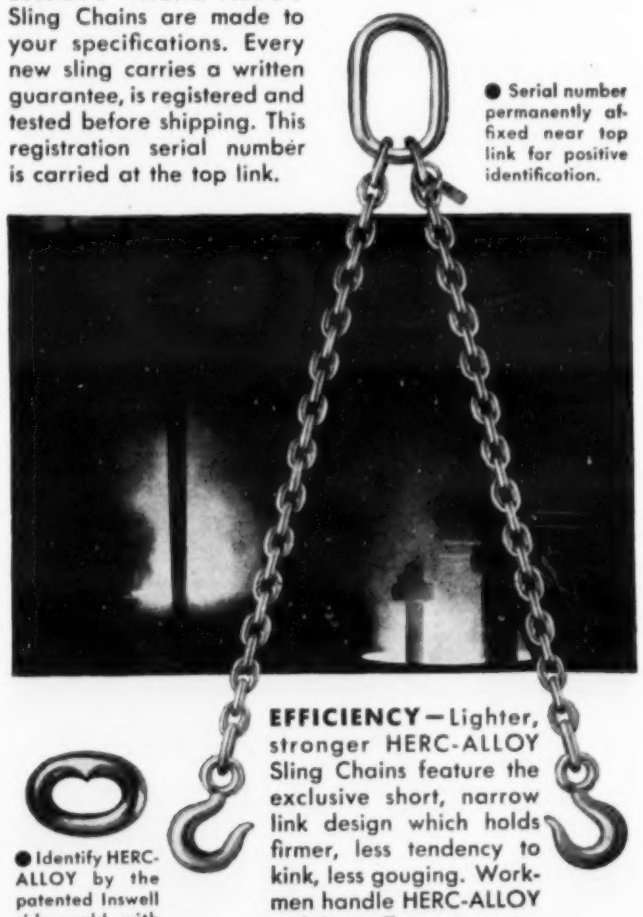
HERC-ALLOY

SLING CHAINS

STRENGTH—Size for size, no other sling chain offers a greater tensile strength. HERC-ALLOY will not crystallize—never requires annealing.

SAFETY—HERC-ALLOY Sling Chains are made to your specifications. Every new sling carries a written guarantee, is registered and tested before shipping. This registration serial number is carried at the top link.

● **Serial number permanently affixed near top link for positive identification.**



● **Identify HERC-ALLOY by the patented Inswell side weld with the extra swell of metal on the inside of the link.**

EFFICIENCY—Lighter, stronger HERC-ALLOY Sling Chains feature the exclusive short, narrow link design which holds firmer, less tendency to kink, less gouging. Workmen handle HERC-ALLOY with less effort.

PREFERENCE—Men who buy and use sling chains are influenced only by facts learned through experience. HERC-ALLOY Sling Chain preference has been built up over the years, not just by what we say, but by how HERC-ALLOY performs on the job.

Write **for Data Book No. 3 which contains much useful manufacturing and application information on HERC-ALLOY Sling Chains.**

COLUMBUS McKINNON CHAIN CORPORATION

(Affiliated with Chisholm-Moore Hoist Corp.)

GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.

***District Offices:* New York • Chicago • Cleveland**

Other Factories at Angola, N. Y., Dixon, Ill., St. Catharines, Ont., Can. and Johannesburg, South Africa.

If you write maker identify as IEN - 6779

SKINNER Solenoid Valves

for air & hydraulic cylinders
fluid shut-off
diaphragm operated equipment
coolant control

M2

BRONZE BODY

"M" SERIES pilot-operated Skinner Valves have extremely fast action, and large capacity on air, inert gas and liquid applications. All internal metal parts are stainless steel or brass. Soft seals prevent leakage — operate in any position — rubber coated, nylon fabric diaphragm for long life — port size ½" or ⅜", orifice ⅜" — power consumption, 10 watts — continuous duty.

M2 is two-way, normally closed, 5 to 150 p. s. i., weight 3 lbs. **M3** is three-way, normally closed, normally open, or directional flow, 20 to 150 p.s.i., weight 3¾ lbs.

M3

Write for Bulletins No. 493 & 494

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
110 Edgewood Avenue, New Britain, Connecticut

If you write maker identify as IEN - 6780

MOBILIFT

Lev-R-Matic DRIVE

FORK LIFT TRUCKS

Low Cost Handling!

- STAND-UP AND SIT-DOWN MODELS
- GAS OPERATED—NO GEARS TO SHIFT
- A SIZE TO FIT YOUR NEEDS

Write for complete specifications or contact your nearest Branch Office.

MOBILIFT CORPORATION
835 S. E Main St., Portland 14, Oregon
2317 W. 18th, CHICAGO • 790 Patterson Ave., E. RUTHERFORD, N. J.
2724 Taylor St., DALLAS • 113 Spring St. N. W., ATLANTA
2730 San Pablo Ave., BERKELEY

MOBILIFT Lev-R-Matic DRIVE

If you write maker identify as IEN - 6781

HERE'S THE TOOL *that fits to a*

The right angle chucking lathe, tracer controlled, provides for efficient profile machining of workpieces having large diameter, short length, and thin wall sections, particularly those made of stainless steel and heat-resistant alloys.

To complete the set-up, an appropriate cutting tool is required. It must be so shaped as to accurately follow the lead of automatic control, face up to the job, and cut corners with maintained precision.

For this very purpose a Kennametal tool has been designed. The mechanically-held triangular insert, seated in a hardened V trough, provides a sturdy design in a 50° nose angle tool that will withstand lateral thrust, and can be modified to smaller nose angles and radii as required by specific profiling conditions.

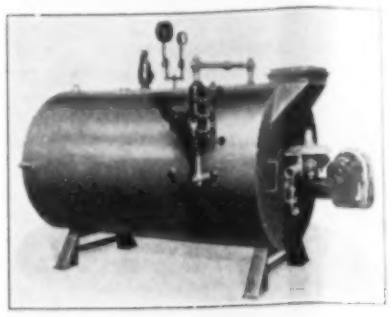
Four shank sizes are available in three different styles—right-hand, lefthand, and neutral, as illustrated in the sketches. See Catalog 52, page 45 for specifications. Confer with our Tool Engineers if you need help in this type of tooling—or any other. Kennametal Inc., Latrobe, Pa.

KENNAMETAL
CEMENTED CARBIDE TOOLING THAT INCREASES PRODUCTIVITY

If you write maker identify as IEN - 6782

BOILER . . Self-contained design, 10 to 30 hp., operates on oil or gas

Source: SELLERS ENGINEERING CO.
4874-78 N. Clark St., Chicago 40, Ill.



Supermarine

The burner in this new self-contained boiler fires into a cylindrical steel combustion chamber. Products of combustion leave the rear end of the chamber and return to the outlet flue at the front through a series of tubes surrounding the chamber. Five ratings are 10 to 30 hp. with shell diameter ranging from 36 to 48 in. and shell length from 69 to 110 inches. Corresponding overall dimensions are 97 to 138 in. in length, 51 to 63 in. in width, 63 to 75 in. in overall height. Steam outlet opening is 1 to 3-in. pipe.

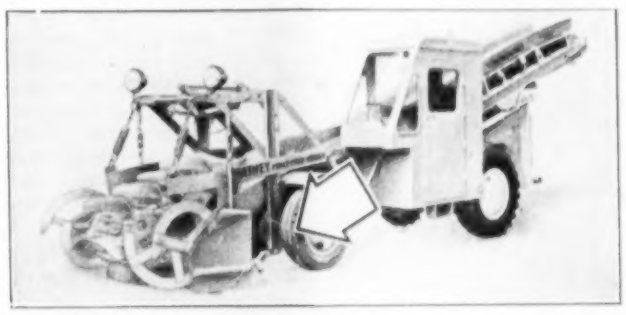
The boiler operates on No. 3 or lighter grade of fuel oil, employing a pressure atomizing burner. This burner can be replaced with a nozzle mixing unit to handle gas. Air for combustion is supplied from a motor driven blower in either case. Operation is automatic with spark ignition when operating on oil. The pilot is spark ignited and remains on with the main flame when operating on gas.

Electronic combustion safe guards are provided. A photocell supervises the main oil flame. A flame rod monitors the main gas flame. Operating pressure is to specification.

If you write maker identify as IEN - 6783

CONVEYING . . Engine driven loader for coal, gravel, stone, dry chemicals

Source: ATHEY PRODUCTS CORP.
5629-33 W. 65th St., Chicago 38, Ill.



For positive action

New feed attachment has been developed for the Model-3 Force Feed Loader, an engine driven machine to gather and convey dry free flowing materials upward from a windrow or stock pile. The machine drives a 30-in. conveyor belt, will handle 10 cu. yd. of material per minute.

Power augers operate on the two sides of the machine's regular inverted-flight positive feed section in connection with a 90-in. moldboard and reversible sideboards. These sideboards face toward the materials to be loaded from a windrow. They are reversed to protect the machine wheels when digging into a stock pile. The attachment is available as regular equipment on new machines or for use on existing machines.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

If you write maker identify as IEN - 6784

TORIT DUST COLLECTORS

WORK WELL IN CLOSE QUARTERS

Torit Dust Collectors are available in both cabinet and cyclone types, in sizes ranging up to 5 h. p.

Note how compactly this Torit 19 FB Dust Separator fits into unused space at the back of a Do-All band saw. It is completely out of the way yet so close to the work that piping, and attendant loss, is minimized. The operator reports a dust collecting efficiency of 99%, with plastic and hard rubber as well as metals.

Torit Dust Collectors are compactly designed, self-contained units. There are models for every standard task and special adaptations can be quickly created. They can fit into your present production lines without a ripple and will make *smooth sailing* of your dust problems. Write for details.

TORIT MANUFACTURING CO.
286 Walnut Street St. Paul 2, Minn.

If you write maker identify as IEN - 6785

NEW SPEED

3 SIZES

for OVER-UNDER WEIGHING with TOLEDO SPEEDWEIGH®

Here's *new speed with accuracy* for you in check weighing, packaging, many other operations today . . . 3 sizes —to 5 lb., to 20 lb., to 50 lb.! Shadowfree wide-angle reading . . . accurate to 1/64 of an ounce . . . new improved knife-edge check link system . . . *exclusive* "coined" bearings for greater accuracy, longer life . . . stainless steel beam . . . enclosed levers in one-piece housing . . . choice of platters and scoops . . . many more *plus* features! Write for bulletin 1416. Toledo Scale Company, Toledo 1, Ohio.

TOLEDO® Headquarters for SCALES

If you write maker identify as IEN - 6786

This company started in a smaller Armco Steel Building. Then business increased and more room was required. So they simply added more standard Armco Building parts. The needed space was obtained quickly, economically.

Erection is easy even for inexperienced crews with the unique STEELOX method of construction. And because Armco Buildings are all-steel, there is nothing to crack, warp or rot. They stay rigid and weather-tight.

Use Armco Buildings for shops, offices, warehouses and similar needs. They are ideal on permanent or temporary sites.

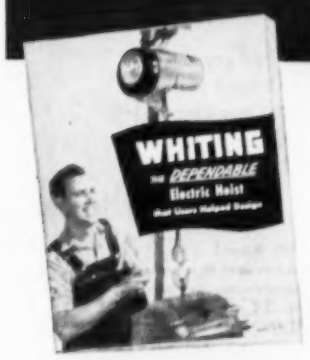
WRITE FOR THE COMPLETE MONEY-SAVING STORY

ARMCO DRAINAGE & METAL PRODUCTS, INC.
3293 Curtis Street, Middletown, Ohio

If you write maker identify as IEN - 6787

LIFT at Lowest Cost!

GET THIS BOOKLET
FOR FACTS ON THE HOIST
THAT WILL SERVE YOU BEST!



Read *why* the Whiting Electric Chain Hoist is the *lowest* in operating cost . . . *why* it is the *safest* hoist and the *easiest* to operate. And read about the *exclusive* Whiting Warranty Plan, too. All this information, plus data on models and capacities is contained in Bulletin H-112. Write for a free copy now!

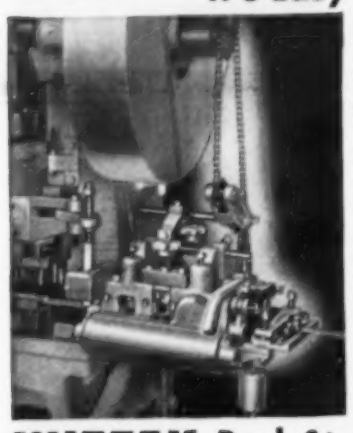
WHITING CORPORATION 15629 Lathrop Ave. • Harvey, Illinois

WHITING ELECTRIC CHAIN HOIST

If you write maker identify as IEN - 6788

Get RAPID-FIRE PRODUCTION from your PUNCH PRESSES

It's Easy with WITTEK Automatic Roll Feeds



Wittek automatic roll feeds fit all makes and sizes of punch presses — provide maximum efficiency and extreme accuracy in the high speed automatic feeding of strip stock. Made in single roll, double roll, and compound types with straighteners, in models to feed (push or pull) in any direction. Length of feed is easily adjusted to meet individual requirements.

4472

WITTEK Reel Stands

Simplify Handling of Coiled Stock

Choice of standard models to facilitate handling coiled stock . . . from small, light coils to those weighing up to 800 pounds. Larger reel stands automatically center the coils — provide frictional braking action to prevent overrunning, maintain uniform coil slack.

Write for full particulars

WITTEK Manufacturing Co.
4336 W. 24th Place, Chicago 23, Illinois

Automatic ROLL FEEDS AND REEL STANDS

If you write maker identify as IEN - 6789

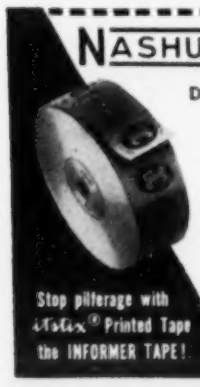
FREE 10 DAY TRIAL OFFER

Speed up your packaging operations

- **SAVE TIME** — complete, controlled moistening of gummed surface made certain by regulated speed of tape under automatic pressure control.
- **SAVE TAPE** — Tape-Mizer dispenses any selected tape lengths from 6" to 70", cut and ready to use.
- **SAVE LABOR** — universal operating trip lets worker trip machine by foot, leaves hands free to fold and handle boxes. Reduces "packers fatigue"!

NASHUA

Mail coupon now!



Stop pilferage with Mitex® Printed Tape the INFORMER TAPE!

NASHUA PACKAGE SEALING

DIVISION OF NASHUA CORPORATION
Nashua, N.H.

World's largest manufacturer of tape moistening machines and gummed tape.

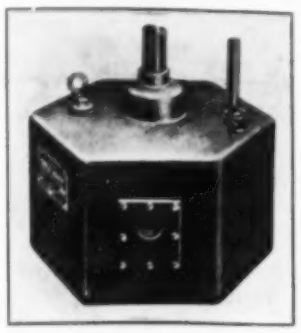
Please send me a National "88" Electric Tay-per® for a FREE 10 day trial.

Name _____
Company _____
Address _____
Dept. 62

If you write maker identify as IEN - 6791

EJECTING . . Pneumatic equipment for liquids, molten metals, slurries

Source: YEOMAN BROTHERS CO.
2000-6 N. Ruby St., Melrose Park, Ill.



Bulletin 4600

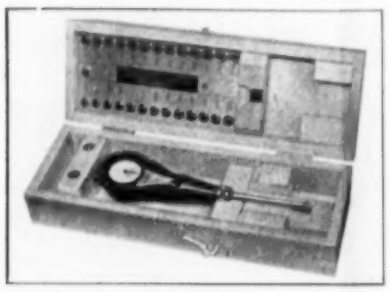
Pneu-Pump trade names a new ejector into which a fluid is directed through a non-return inlet valve. The fluid fills the interior until it overflows into a seal pipe, the overflow acting to close this seal to atmosphere. Compressed air, which has been connected to the housing, then builds up pressure to eject the contents. The fluid moves out through a discharge pipe until the seal pipe opens and its contents are siphoned also into the discharge exhausting the air pressure. Final phase is a jet of air and fluid that prevents blocking in the pipe. The refilling actions starts again when pressure is relieved and the cycle is repeated.

Effective capacity, per cycle, ranges from 2½ to 24 gal. in four sizes. Maximum output is 5 to 60 gpm. at 30 ft. head. The discharge pipe ranges from 1 to 3 inches. The air inlet pipe is ¼ to ¾ inch. The assembly is available in plain cast iron, lead lined, rubber lined or with a stoneware housing to handle acids and corrosive liquids.

If you write maker identify as IEN - 6792

GAGE . . Dial indicator and discs for bores from 0.250 to 0.375 inch

Source: STANDARD GAGE CO.
55 Parker Ave., Poughkeepsie, N. Y.



Dial reads over and under

New indicator kit provides an assembly of the company's bore gage No. 00, previously described IEN-6429-52, and a set of centering discs that apply at the measuring tip. These discs range in 0.005-in. steps between 0.250 and 0.375 inch. Each disc attaches to the instrument head where it is locked by a knurled nut. It is a few thousandths smaller than the bore to be gaged.

The gage is entered at an angle to allow its extended plunger to clear the bore. Then it is rocked to cause the plunger to pass a square position while a minimum reading is noted on the indicator. The plunger actuating the indicator is sapphire tipped. The centering discs are chromium plated.

Identify as IEN - 6793

Carbonite Metal Company is offering small sticks, one pound each, of its Nickelite tin base babbitt and its companion tinning compound to resurface scored ways on planers and similar machine tools. It supplies instructions so you can do the work in your own plant.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6794

WOMEN WORK WELL WITH RAYTHEON WELDPOWER® WELDERS

Says **BOMAC LABORATORIES, Beverly, Mass.**

In selecting Raytheon WELDPOWER units exclusively for production welding parts for Hydrogen Thyratron tubes, Bomac Laboratories chose Raytheon WELDPOWER because:

- **Unskilled women operators learn to make acceptable welds in a matter of hours.**
- **Oxides and annealing caused by welding are eliminated.**
- **Maintenance and interchange of electrodes are easily accomplished.**

Learn the many advantages of joining ferrous, non-ferrous or dissimilar metals with Raytheon Condenser Weldpower Control Units. Available in 3 sizes with appropriate Weldpower Heads.

Send sample parts or write for details to Dept. 6270 (IN-6).

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING COMPANY
Equipment Sales Division, Waltham 54, Mass.
DISTRICT OFFICES: Boston • New York • Cleveland • Chicago
New Orleans • Los Angeles (Wilmington) • San Francisco • Seattle
INTERNATIONAL DIVISION, 19 RECTOR STREET NEW YORK CITY

If you write maker identify as IEN - 6795

NO INSTRUCTIONS NECESSARY WITH THIS EXTINGUISHER!

IT'S A RANDOLPH!

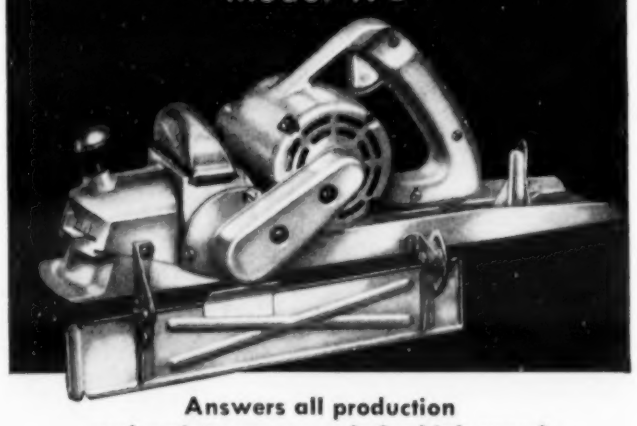
From Bracket to Blaze in split seconds! No valves to turn, no nozzles to adjust; just point and press your thumb and Randolph's cloud of snowy CO_2 kills fire instantly. Non-damaging, non-toxic, won't conduct electricity, deteriorate or freeze. A complete line of extinguishers. Underwriters' approved. Write for catalog to RANDOLPH LABORATORIES, INC.
6 E. Kinzie St.
Chicago 11, Ill.

If you write maker identify as IEN - 6796

Newest design and features ...*lightest weight*

SKIL 3" POWER PLANE

Model 190



Answers all production and maintenance needs for high speed edge and surface planing

No other plane to match this one at anywhere near its price! Lighter than any comparable tool. Reinforced, non-slip, cog belt drive eliminates gears, minimizes shock loads. Ball bearings throughout. Positive right or left hand chip ejection. Depth and bevel adjustment. Blades sharpened easily, quickly.

Widest use in dozens of industries . . . for all ordinary and many unusual applications!

Builders, pattern shops, cabinet workers and woodworking industries find constant use for the SKIL Plane. Ideal, too, for surfacing plastics, hard rubber and composition material. Ideal *maintenance* tool for every type of business. Saves time, saves money, saves work!

SKIL 3" Plane—Dependable *Production* Tool

Width of cut: 3" Depth of cut: 0" to ⅛". Bevel guide: 90° adjustment for 45° right or left bevel. Bearings: Ball bearings throughout. Chip deflector: Reversible for exhaust, right or left. No-load speed, cutter head: 13,500 r.p.m. Net weight: 10½ lbs.

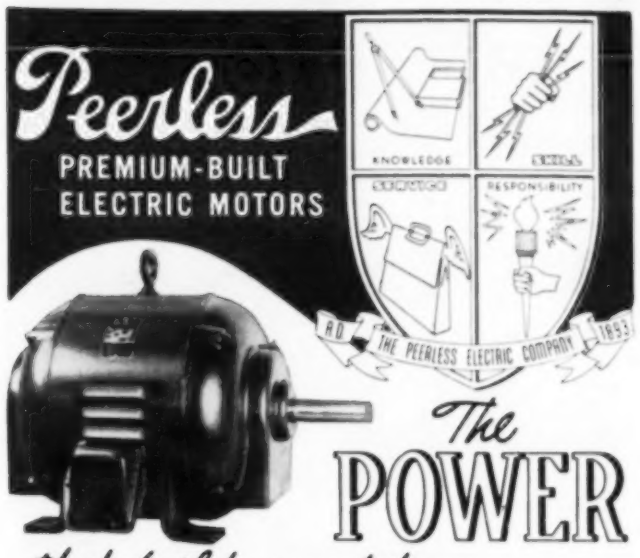
Write for Complete Information on SKIL 3" Plane. Dept. IEN-63, SKIL Corporation 5033 Elston Ave., Chicago 30, Ill.

SKIL Products are made only by SKIL Corporation formerly SKILSAW, Inc.
5033 Elston Avenue, Chicago 30, Illinois
3601 Dundas Street West, Toronto 9, Ontario
•
Factory Branches in All Leading Cities

SKIL PORTABLE TOOLS

If you write maker identify as IEN - 6798

Peerless
PREMIUM-BUILT ELECTRIC MOTORS



The POWER
that builds reputations

No greater compliment can be paid a motor than to call it Peerless. The men who build, sell and service America's finest mechanical equipment know what we mean.

"Service" by our representatives; "knowledge" of Peerless engineers; "skills" of its manufacturing personnel; and, "responsibility" of Peerless top management result in a motor with that extra something.

Yes, The Peerless Electric Company is proud to build motors with that extra something . . .

Something we call the Power That Builds Reputations.

THE PEERLESS ELECTRIC COMPANY

MOTORS
FANS
BLOWERS

Peerless Electric

1415 W. MARKET ST.
WARREN, OHIO

If you write maker identify as IEN - 6799

DIELECTRIC STRENGTH TESTING INSTRUMENTS

. . . from a handful
. . . to a shop full!

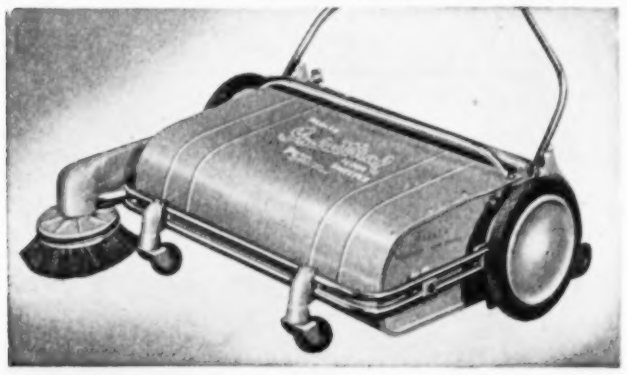
You name it . . . ARI either has it, or can build it for you promptly from sound design and long experience with virtually every known type of high potential dielectric strength testing instrument.

Standard "Hypot" Juniors range from 0-1500 volts to 0-6000 volts. Large mobile Hypots available to 50,000 volts, 5 KVA. **Write for data today!**

ASSOCIATED RESEARCH, Incorporated
"Precision Instruments Since 1936"

3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

If you write maker identify as IEN - 6800



Pay Dirt

Sweep your floors the Parker Sweeper way and floor dirt becomes pay dirt. A Parker Sweeper is 400% faster than inefficient pushbrooms. It reduces "taken-for-granted" sweeping expenses by surprising amounts. Sweeps and collects in one operation. Easily pushed . . . easily emptied. Ideal for all businesses from small garage to large factory.

Full details in big descriptive bulletin. Write **PARKER SWEEPER COMPANY, 46 BECHTLE AVE., SPRINGFIELD, OHIO.**

PARKER FLOOR SWEEPERS
Manual and Motorized Models

If you write maker identify as IEN - 6801

DRIVE . . Variable speed control, ¾ to 3 hp. dc. motor from ac. line

Source: RELIANCE ELECTRIC & ENGINEERING CO.
1111 Ivanhoe Road, Cleveland 10, Ohio

Details upon request

Power range has been increased from a maximum of 2 hp., previously described IEN-2817-50, to 3 hp. in the company's electronic variable speed motor control. A dc. motor is operated from an ac. line through the control equipment. Speed range is adjustable in stepless progression from 290 to 2,300 rpm., in normal assembly. Lower ranges can be maintained when the company supplies its Gear Motor for a slow-speed drive.

The drive provides a smooth powerful start, stepless speed selection, jogging for set-up, reverse by adding a drum switch station, quick stop by inclusion of dynamic braking. Standard operation is on 220-volt 50 or 60-cycle single-phase ac.

Standard equipment includes a drive motor, the operator's control station and a control unit. The motor is supplied in ball bearing design, drip proof, enclosed, fan cooled or explosion proof construction. The operator's station mounts start-stop push buttons, a run jog selector switch and the speed adjustor. It measures about 3 by 3 by 7½ inches.

If you write maker identify as IEN - 6802

WOODWORKING . . Radial saw, 12 or 14 in. blade, 2 to 5 hp. motor

Source: DEWALT INC.
63 Fountain Ave., Lancaster, Pa.

Assures accuracy

Model GA replaces a previous Model GR in the company's line of radial arm sawing machines. The new assembly consists of a steel table frame, wood top, column, arm, carriage, yoke, motor, control switch and guard. The table top measures 28 by 44 inches. The blade can be set universally for a square, angle or compound angle cut. It locks in the set position. Depth capacity is to 4½ in. with a 14-in. blade and 5-hp. motor. Maximum cross cut is 14 in. at maximum depth. Ripping capacity is 29 inches.

The arm is made of semi-steel in uniform cantilever box section. The carriage rides on eight grease packed ball bearings that roll on machined tracks inside the arm. The yoke is aluminum. The motor is the company's own design and can be specified in standard electrical characteristics.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6803

SPECIFY
Maxwell
RECESSING TOOLS...

FOR PRECISION GROOVING, RECESSING AND BACKFACING

Versatile **MAXWELL** recessing tools can be used on any drill press, boring mill, turret lathe, radial drill or milling machine. Ball-bearing pilots and high speed or carbide cutters are interchangeable to handle any job within range of holders.

MAXWELL recessing tools are precision built for sustained accuracy in production runs . . . yet take cuts at unusually high feeds. 4 sizes available for ⅜ to 4-inch holes.

Write today for literature.

1055-MC

THE MAXWELL COMPANY
391 Broadway • Bedford, Ohio

If you write maker identify as IEN - 6804

FOR BETTER PRINTS...
BRUTEX
PENCIL TRACING CLOTH

1. **SUPER-VELVET MATTE SURFACE** . . . white or blue – exactly right for pencils of even the harder grades.
2. **UNIFORM TRANSLUCENCY** . . . makes clean, sharp prints.
3. **ERASES EASILY** . . . no "ghosting". Surface is unaffected by even repeated erasures.
4. **MOISTURE-RESISTANT** . . . no "spots" from dampness or perspiration.
5. **PERMANENT** . . . won't discolor, become brittle, or lose translucency.

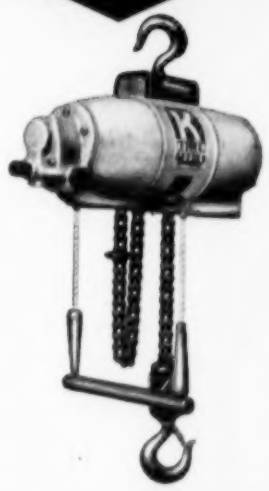
Prove it on a FREE SAMPLE! Write for free sample and booklet. CHARLES BRUNING COMPANY, INC., Dept. B63, 4700 Montrose Ave., Chicago 41, Ill.
A-3-1

BRUNING
Everything for the Engineer and Draftsman

If you write maker identify as IEN - 6805

KELLER
Air Hoist
with positive displacement piston-type air motor

RATED FOR **continuous duty**



Keller Air Hoists can be used continuously over periods of hours (or days) without danger of shortening motor life.

DUST, FUMES cannot injure an air motor. Nor will it burn out, even if stalled all day long.

LOW MAINTENANCE because of simple design.

VARIABLE SPEED from 0 to 17 fpm permits safe handling of fragile loads.

LIGHTWEIGHT — A 1,000-lb capacity hoist weighs only 30 lb—easy to move from job to job.

Send for **illustrated descriptive bulletin and detailed information**

Keller Tool Company
GRAND HAVEN, MICHIGAN

If you write maker identify as IEN - 6806

"We Consider DY-NAMIC BALANCING absolutely necessary for HIGH SPEED Rotating Parts"
says G. Selig, vice president and plant manager of Remsel Industries, Chicago, Illinois, where this "Bear" Dy Namic Balancing Machine is used to balance impellers.

The need for Dy-Namically Balancing every rotating part—especially those that spin at high speeds—is being recognized in every phase of industry. Select the "Bear" Machine that fits your budget and your operation from the . . .

free DY-NAMIC BALANCING MANUAL!

Tells how you can easily, quickly, economically balance rotors, armatures, crankshafts, and any other part that turns, weighing from 4 oz. to 8 tons! See how to reduce wear, eliminate noise and vibration, improve all-around performance of finished product. Your copy sent without cost or obligation. Bear Mfg. Co., Dept I-8, Rock Island, Ill.

6038

"BEAR"
STATIC AND *DY-NAMIC BALANCING* MACHINES
balance rotating parts weighing from 4 oz. to 8 tons

If you write maker identify as IEN - 6807

ECONOMICAL

STAMPED PARTS IN SMALL QUANTITIES

Yes, it *is* possible—but it's a special skill of ours.

It's done with a new price-slashing method of making dies, used in conjunction with special machinery. In other cases we use custom equipment for die-less duplication by our own Machine-Cut Method.

FOR EXPERIMENTAL OR PRODUCTION REQUIREMENTS at rock-bottom prices, send us your blueprints. And make sure you get our latest, fact-packed literature.

STAMPINGS DIVISION

"ONE PIECE OR ONE MILLION"

LAMINATED SHIM COMPANY, INC.

2106 UNION STREET • GLENBROOK, CONNECTICUT

If you write maker identify as IEN - 6808

TYPE J7

RUGGED, COMPACT, INEXPENSIVE PRESSURE CONTROLS

TYPE J40

The Type J40 pressure control is a rugged, precision-built and inexpensive unit for use where light, compact and reliable controls, without head enclosures, may be used. It is used widely on industrial equipment, on aircraft and other engine applications. Complete specifications are covered in Bulletin #5-9. Write for one today.

The Type J7 is the most compact enclosed industrial pressure control offered by United Electric. It may be used for controlling gas, liquid or air pressure in applications where space and weight availability is a premium and where precise performance under rugged vibration conditions is a requisite. Bulletin #5-7 gives full details. Write for it today.

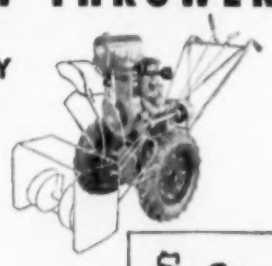
UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

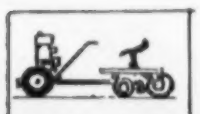
STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as IEN - 6809

MAXIM SNOW THROWERS

NOW A GOOD BUY FOR DECEMBER OR JULY





3-Gang 72" Mower

37" Rotary Mower

Now you can use a Maxim Snow Thrower all year long. The snow thrower unit is readily removable, leaving a sturdy 7.5 h.p. tractor on which you can quickly attach the equipment shown here. Tractor is equipped with a heavy duty transmission having 3 forward speeds and one reverse. Use this one piece of equipment for snow removal, mowing, rolling, grading, or hauling.

700 Lb. Lawn Roller

42" Grader or Snow Blade

1/2 Ton Dump Trailer

WRITE FOR DETAILS ON THIS MULTIPLE USE EQUIPMENT!

THE MAXIM SILENCER COMPANY
71 Homestead Avenue, Hartford 1, Connecticut

Name _____

Address _____

IMT53

If you write maker identify as IEN - 6810

INDEXING . . Rotary table, pneumatic pawl feed for machine uses

Source: A. K. ALLEN CO.
55-59 Meserole Ave., Brooklyn 22, N. Y.

Piston powered

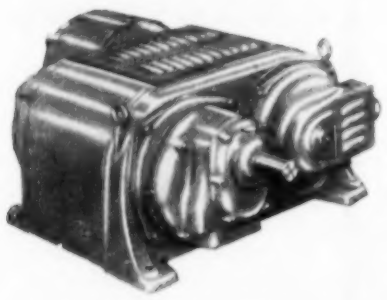
Models 11FA and 11 FB are new designs of the rotary indexing tables previously described IEN-3765-51. They are featured by the addition of an auxiliary air cylinder. It is built inside the table to bring a set of mechanical locking members into toggle position. They lock the feed pawl and the ratchet to prevent over-riding. A new pawl locks the table against rearward movement when it has reached indexed position. A hydraulic check can be added for shock absorbing action, at the end of each index stroke, for operations requiring particularly smooth operation.

The two models are identical except for the addition of a two-way valve and a pilot timer valve on Model 11FA for automatic operation. Index positions are standard and subject to specification at 4, 6, 8, 12 and 24 increments in a complete circle. Accuracy is guaranteed within 0.002 in. at the periphery of the 11-in. top plate. List prices are $325 and $365.

If you write maker identify as IEN - 6811

DRIVE . . Variable speed unit, ac. motor and V-belt transmission

Source: U. S. ELECTRIC MOTORS INC.
Box 2058-A Terminal Annex, Los Angeles 54, Calif.



Ask for Varidrive Bulletin

Varidrive units are now available in horizontal assembly, to 30 hp., by addition of a new frame size 64 VE to the line. The unit is essentially the same as the upright Varidrive, previously described IEN-12920-52. It includes the ac. motor, variable speed transmission and gearing when the latter is required. Also included is a speed control and indicator, an Autotaut tension control for permanent belt adjustment. The control can be located above the motor or at one side. Remote controls are available. Speed ratio is maximum at 10 to 1 for output speed from 2 to 10,000 rpm.

Identify as IEN - 6812

Three scholarships now are offered annually to selected salaried employees of M. W. Kellogg Company to provide tuition grants for undergraduate and graduate study while maintaining regular base pay. Each of the three selected will attend classes full time, two for a bachelor's degree and one for a master's degree in the course selected.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6813

for "INSTRUMENT-QUALITY" AIR

IN COMPRESSED AIR OPERATIONS

HANKISON
MODEL A-100-D
Condensifilter

Featuring the New—Economical DISPOSABLE FILTER CARTRIDGE

- ***CONDENSER***
- ***MECHANICAL FILTER***
- ***AUTOMATIC TRAP***

Combined in a single unit!

RATE OF CAPACITY: 100 scfm at 100 psig

MULTIPLE UNITS: Installed in parallel increase capacity

Consult us on your specific problems

WRITE . . . for illustrated bulletin DB-130

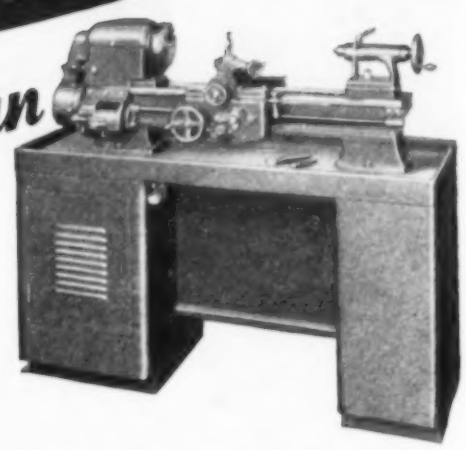
HANKISON CORPORATION

350 Biltmore Building • 951 Banksville Road • Pittsburgh 16, Pa.

If you write maker identify as IEN - 6814

speaking of RUGGEDNESS . . .

Logan Has It!



Logan No. 955
QUICK CHANGE GEAR LATHE
11" Swing, 1" Collet Capacity, 1⅜" Spindle Hole

WORKHORSE schedules are the lot of Logan Lathes because industry knows it pays to keep the Logans turning. Durable as well as accurate, the Logan *stays* profitable to operate. Sustained accuracy is built into its ball bearing spindle and into the rugged, balanced, warp-free bed with two V-ways and two flat ways precision ground to a tolerance of .0005". The entire lathe is ruggedly proportioned. Self lubricating bronze bearings protect vital points against wear. Construction like this makes your Logan Lathe with its 11" swing and 1" collet capacity a tool that can "take it" through extra years. That is the big reason why no other lathe of comparable specifications can match Logan economy. *Write for The Logan Catalog.*

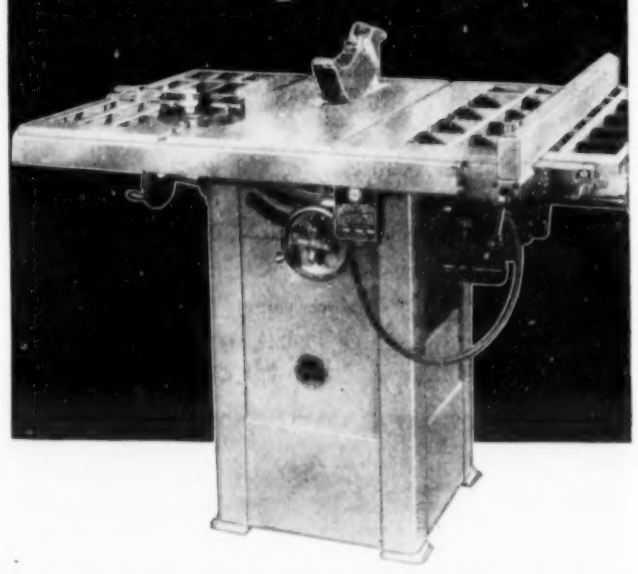
LOOK TO LOGAN FOR BETTER LATHES AND SHAPERS

LOGAN ENGINEERING CO.
4901 West Lawrence Avenue, Chicago 30, Illinois

If you write maker identify as IEN - 6815

new

WALKER-TURNER *LIGHT-HEAVYWEIGHT* 10" Tilting Arbor Saw

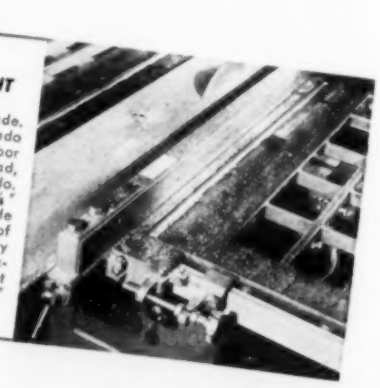


An entirely new *class* of machines. Walker-Turner's Light-Heavyweights are "made to order" for jobs where neither the capacity nor expense of heavy industrial machinery is warranted and where a "light machine" would be wholly inadequate.

The Walker-Turner Light-Heavyweight line gives industry for the first time, the machine accuracy, speed, and versatility required for efficient operation, *without the necessity of heavy investment.* For complete information, write Walker-Turner Division, Dept. IE6, Kearney & Trecker Corp., Plainfield, N.J.

TYPICAL LIGHT-HEAVYWEIGHT

Cuts 3⅛" deep with 10" blade. 2⅛" material at 45°. 6" Dado heat cuts 1⅛" deep. Saw arbor ⅝" Acme left-hand thread, takes up to 1" wide dado. Speed: 3800 r.p.m. Table: 26¾" wide x 32½" deep. With side extensions 44¾" wide. Front of table to blade 18". Safety guard, splitter and 2 anti-kick-back pawls. Fence locks front and rear. Available also in 8" and 12" models.



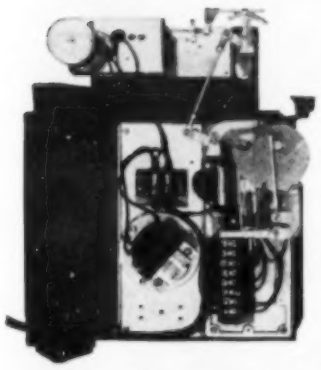
SOLD ONLY THROUGH *TRAINED* INDUSTRIAL DISTRIBUTORS

WALKER-TURNER
• DIVISION •
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

DRILL PRESSES — Hand and Power Feed • RADIAL DRILLS • Wood and Metal Cutting BAND SAWS • TILTING ARBOR SAWS • RADIAL SAWS • JIG SAWS • LATHES • SPINDLE SHAPERS • JOINTERS BELT AND DISC SURFACERS • FLEXIBLE SHAFT MACHINES

If you write maker identify as IEN - 6817

a new electronic flow meter!



- electronic operation provides high speed and greater accuracy
- continuous integration —no creep at zero
- unaffected by normal voltage, frequency and temperature changes
- 3 to 1 range calibration at recorder

HAYS Electronic Flow Meter

Since the circuit is of the electronic null-balance type, it is unaffected by normal voltage and frequency variations. Also, neither temperature variations nor reasonable length of transmission lines affect the calibration of the instrument.

The *pen-drive motor* is built for reversing duty. Normal variations in voltage and frequency have no noticeable effect on its operation. The *integrator* is continuous in operation and simple in mechanical construction. A micrometer zero adjustment for calibration is easily accessible. *Indicators* can be calibrated to read directly in rate-of-flow or other factors as desired. *Write today for Bulletin 52-1074-222.*

THE hays CORPORATION
MICHIGAN CITY 16, INDIANA

If you write maker identify as IEN - 6818

PRODUCTION UP
COSTS DOWN
WITH Commander PRODUCTION TOOLS

Adjustable MULTI-DRILL

- Adjustable To Any Hole Pattern
- Drill 2 to 8 Holes at 1 Stroke
- Fits Any Drill Press

MODEL 900

Increase production up to 800%—save time, cut costs. Mounted without alterations or special tools. 9" drilling area; centers to ½". Extension Spindles available to increase area to 22½". Special adaptations available.

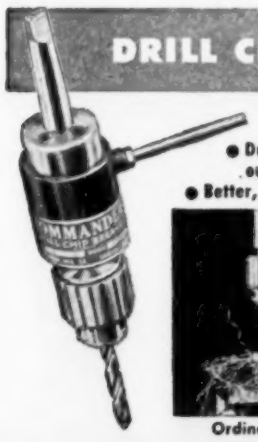
"the tapper that thinks for its operator"

Commander TAPPER

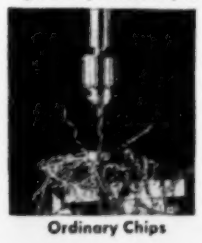
- Wider Range . . . 1 Tapper Handles #0 to ¾" Taps
- Automatic Tap Protection
- Furnished to Fit Any Drill Press

Adjustable full range torque control instantly stops any tap when it's dull, loaded, strikes a hard spot, or bottoms in blind hole tapping. Assures maximum production, cuts rejects, even with inexperienced operators.

DRILL CHIP BREAKER



- Drill SHALLOW or DEEP Holes up to 400% Faster
- Drill 10 diameters or more in depth without clearing drill
- Better, Smoother, More Accurate Holes



Ordinary Chips

Chip Breaker Chips

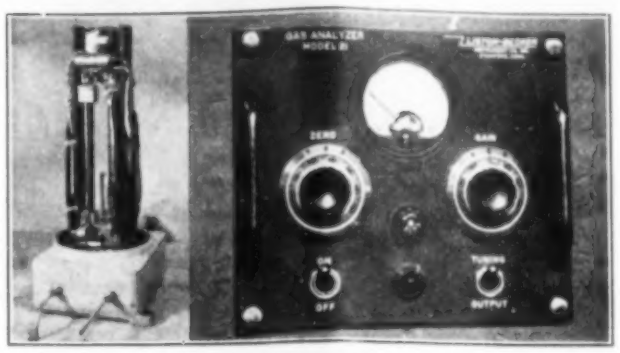
Write FOR CATALOG #851 and the name of your nearby Commander Distributor

Commander MFG. CO.
4219 W. KINZIE STREET
CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 6820

TESTING . . Infrared equipment for continuous check on a selected gas

Source: LISTON-BECKER INSTRUMENT CO.
647-51 Hope St., Springdale, Conn.



For specified gas

Carbon monoxide, carbon dioxide, water vapor, methane, acetylene, benzene, nitrous oxide, ethane are representative gases that can be checked continuously in a plant stream by application of this new Model-21 industrial analyzer. The equipment is divided into two sections. One is a pick-up section, enclosed in a Crouse-Hinds explosion proof box approved by Underwriters' Laboratory, Inc., for Class-1 locations. The other is a control section, consisting of an amplifier and the required controls for installation on a panel in any location within 400 ft. of the pick-up unit. This unit is shown to the left in the illustration with its cover removed. The panel face of the control is shown to the right.

Characteristic is the fact that the analyzer can be sensitized for a specific gas and readings made independent of other gases in a plant stream by choosing the correct absorption cell and associated components. Adjustments are made at the control panel for zero setting and for sensitivity. The latter control can be employed to change the range instantly to follow abnormal conditions such as occur in plant start-up and then to reset to a normal range.

The final amplified signal can be fed into a standard 10-millivolt potentiometer type recorder, such as a Brown or Leeds & Northrup, for control application. A typical installation employs cylinders of standard mixtures of known concentrations of the gas being checked. Push buttons located on the control panel provide for selection of the sample stream and the standard gas to periodically test zero and sensitivity settings of the test equipment.

If you write maker identify as IEN - 6821

LADDER . . Extension unit mounts on a truck, hydraulic operation

Source: J. H. HOLAN CORP.
4140 W. 150th St., Cleveland 11, Ohio

200 lb. at 45 degrees

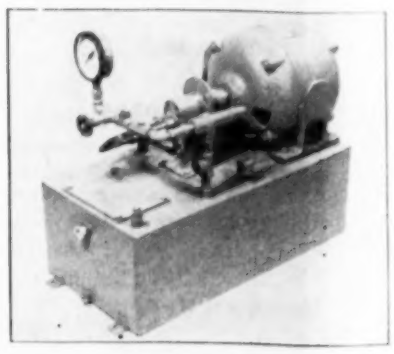
Series 2100 designates new design of a mobile extension ladder initially developed for public utility use. It is intended primarily for maintenance and construction operations in large plants. It is available with 27, 31 or 35-ft. platform elevations.

Hydraulic pressure is supplied for the elevating and rotating action by an engine driven hydraulic pump and motor and a hydraulic cylinder. Control centers at a multiple plunger hydraulic valve located on the base.

If you write maker identify as IEN - 6822

DRIVE . . Hydraulic pump with motor, tank and accessories

Source: HACKETT BROTHERS INC.
200-204 W. Main St., Dept. 126, N. Manchester, Ind.



Utility power unit

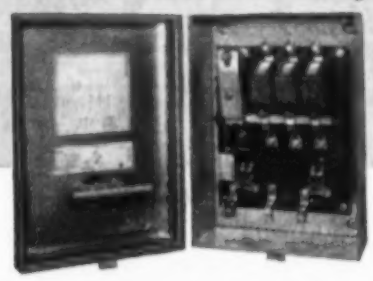
Capacity ranges from 0.8 to 2.8 gpm. in twelve sizes of this new hydraulic power unit. The smallest motor is ¼ hp. The largest is 3 hp. Pressure range is between 400 and 1,000 pounds. The smallest assembly employs a 10-gal. reservoir. The largest rates 20 gallons. The smallest unit operates on 110-volt single-phase ac., the largest on 220/440-volt three-phase ac. In each size is an assembly for continuous duty and one for intermittent duty.

Equipment includes the gear type pump in an aluminum housing, motor, the reservoir, a gage and the necessary pipe fittings and connections. Included also are filters on the air breather and on the oil intake. List price is $285 to $430 without the gage, snubber and shut-off valve. These units add $20. Tanks are 24 by 12 by 8 in. to 30 by 14 by 12 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6823

QUICK-QUENCHING
ALLIS-CHALMERS New Size 4 STARTER
Extends Contact Life



This size 4 magnetic, full voltage starter features a 150-amp, 600-volt contactor utilizing a quick-quenching arc centering blowout . . . a new principle of arc interruption which minimizes destructive burning and pitting of contacts. Contactor is clapper-type with single break contacts. Melting alloy-type relays provide overload protection. Starter available in general and special purpose enclosures.

There is an Allis-Chalmers starter for every motor need. Contact your nearby A-C representative or write for selection guide 14B7733, Allis-Chalmers, Milwaukee 1, Wisconsin. A-4047

ALLIS-CHALMERS

If you write maker identify as IEN - 6824

free Bulletin ON Delpark

FULL FLOW, SELF CLEANING
INDUSTRIAL FILTRATION

Here's literature that can help you solve filtration problems in your plant.

The famous Delpark Industrial Filter is designed for the maximum of filtration with the minimum of maintenance.

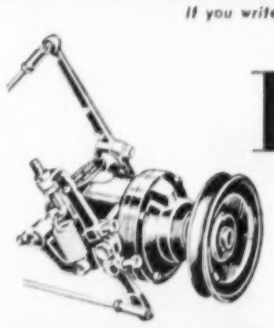
Full flow, self cleaning, continuous, fully automatic, Delpark Industrial Filter applications include the filtration of coolants, quenching oils, paint spray-booth water, air-conditioning wash water, and numerous other applications.

Write today for this free booklet and acquaint yourself with the facts on the finest in Industrial Filtration.

Backed by More Than 30 Years in Industrial Filtration

INDUSTRIAL FILTRATION COMPANY
95 INDUSTRIAL AVENUE LEBANON, INDIANA

If you write maker identify as IEN - 6825



now ONE GOVERNOR ONE MODEL . . .
for 9 out of 10 industrial and farm engines

PIERCE LONG RANGE UNIVERSAL GOVERNOR

- Instant variable speed selection and accurate engine control at any speed setting within 1200 to 2600 RPM. Higher and lower ranges obtainable by simple change of pulley. Also "constant speed" operation.
- Accurate, dependable speed control for engines operating corn shellers, drag lines, hoists, arc welders, trucks and tractors with power take-offs, etc.

List Price $39.50 Pulley extra

Write for Complete Information

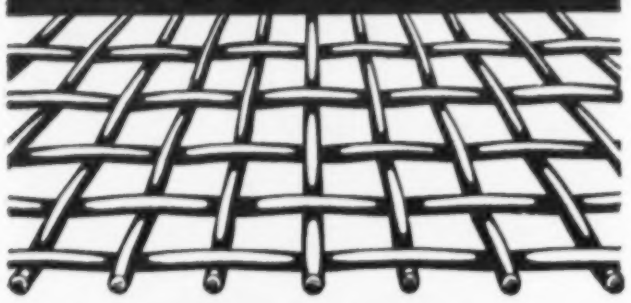
DEALERSHIPS AVAILABLE

THE PIERCE GOVERNOR COMPANY, INC.
1636 Ohio Avenue, Box 1000, Anderson, Indiana, U. S. A.

WORLD'S MOST EXPERIENCED GOVERNOR MANUFACTURER

If you write maker identify as IEN - 6826

CAL-WIC WIRE CLOTH



meets all **STANDARD** and **SPECIAL** requirements

Either as original equipment or for specialized uses in filtering, screening, grading, cleaning or processing, Cal-Wic Wire Cloth is available in the right weave, mesh and weight to give you long-wearing, dependable service.

Made in different types of metals and alloys for high resistance to chemical action, corrosion, abrasion and temperature extremes.

For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

CAL-WIC CFI
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 6827

New Hunter Industrial Fan

POWERFUL, LOW-COST VENTILATION

FEATURES:

- Streamlined orifice for efficient air entrance
- Aluminum alloy blades—non-rusting, non-crystallizing, non-overloading
- "Gull Wing Design" airfoil blades for strength and uniform pressure
- Effective up to ½ in. static pressure
- Heavy continuous-duty motor
- Permanently lubricated and sealed for life
- Direct-drive for reduced maintenance costs
- Automatic shutters to fit all fan sizes

Hunter

CLIP AND MAIL NOW FOR COMPLETE DATA

Hunter Fan & Ventilating Company
375 S. Front St., Memphis 2, Tenn.
Send complete information on Hunter Industrial Fan to:

Name_____

Address_____

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

Identify as IEN - 0386

REGULATING VALVES . . Self-contained remote-bulb temperature-regulating valves for steam, gas, water and other fluids from 25 to 275 deg. F. How they work and how to select are in 8-page Bulletin ST-162. Farris Stacon Corp., 550 Commercial Ave., Palisades Park, N. J.

Identify as IEN - 0387

GAGE VALVES . . Types for tubular and flat glass liquid-level gages are covered in new set of 9 data sheets. Looseleaf Catalog Sheets 187 to 195 inclusive. Jerguson Gage & Valve Co., 80 Fellsway, Somerville 45, Mass.

Identify as IEN - 0388

VALVES . . Needle, globe, plug, check, relief, special valves for tube and pipe connection in hydraulic, lubricating, fuel, steam, air, vacuum, chemical and other lines. These and pressure snubbers for gages in 48-page Catalog 352A. Republic Mfg. Co., 1928-32 W. 77th St., Cleveland 2, Ohio

Identify as IEN - 0389

VENTILATING . . Fixed and adjustable wall louvers provide weatherproof inlets for ventilating air. Sizes, construction points, operators in 8-page Catalog SPV-17. Burt Mfg. Co., 42-46 E. South St., Dept. IEN, Akron 11, Ohio

Identify as IEN - 0390

VISES . . Machine, bench, woodworking vises and a universal-positioning holding fixture for production work on which the company can supply a line of standard attachments for given work. Catalog 109, 28 pages. Wilton Tool Mfg. Co., 927-39 Wrightwood Ave., Chicago 14, Ill.

Identify as IEN - 0391

WATER PROOFING . . Line of materials to stop leaks in a masonry wall, to fill and seal the surface, to form a finish coat, above or below ground. Bulletin 17, 16 pages. Standard Dry Wall Products, 75-79 Hudmont, New Eagle, Pa.

Identify as IEN - 0392

WEIGHING . . Bulk material is measured on the run by the Transportometer continuous weighing and totalizing scale which applies with a belt conveyor. Eight-page Bulletin 301 also presents a feed-regulating assembly. Sintering Machinery Corp., 453 Sinter Ave., Netcong, N. J.

Identify as IEN - 0393

WELDING ELECTRODES . . Stainless steel in two coating types and 23 analyses, described by 20-page Bulletin AR-53-16 as to type, suitability, properties, procedure, identification. Alloy Rods Co., 6506 W. Market St., York, Pa.

Identify as IEN - 0394

WELDING TORCHES . . Oxy-acetylene and LPG types, also cutting torches, torch tips and attachments, heating torches, weed burners, Gasaver lever-operated shutoff, regulating valves, clothing and accessories. Catalog 495, 28 pages. Weldit Inc., 988-92 Oakman Blvd., Detroit 6, Mich.

Identify as IEN - 0395

WINCHES . . Car spotters and car pullers with electric drive in sizes for single cars or trains. Book 2092, 24 pages, covers standard and special pullers, suggests layouts, shows other uses for heavy-duty pulling service. Link-Belt Co., 305-9 N. Michigan Ave., Chicago 1, Ill.

Identify as IEN - 0396

STAINLESS WIRE . . Allegheny Metal wire in grades and tempers for cold headed products, wire cloth, wire rope, springs, conveyor belts, and many other uses. Booklet SS-33 20 pages, gives size and selection data. Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Pittsburgh 22, Pa.

Identify as IEN - 0397

WRENCHES . . Hand tools and sets including a variety of standard wrenches, torque wrenches, screwdrivers, drills, saws, punches, reamers. Catalog, 128 pages. Cornwell Quality Tools Co., 1020 Cleveland Ave., Mogadore, Ohio

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6829

NOW M&T's hermetically sealed tin cans give you permanently all the advantages of MUREX Stainless Steel Electrodes. Moisture pick-up is eliminated — electrodes can be stored indefinitely without deterioration — chipping and handling damage, too, is prevented by packaging in six-container, specifically reinforced, double-cartons. *Inner* carton grips each container separately — *outer* carton furnishes extra overall protection. Get high quality MUREX Stainless Rods — in packages engineered to keep them that way! Remember, no matter what composition of stainless you are welding — M&T's extensive MUREX line provides the particular electrode to give best results. Rods are available in three different coatings — lime, titania, AC-DC — to suit the welding condition.

★ STOPS MOISTURE PICK-UP
★ PERMITS INDEFINITE STORAGE
★ PREVENTS SHIPPING DAMAGE

NOW IN HERMETICALLY SEALED TIN CANS

MUREX®
STAINLESS STEEL ELECTRODES

Check into your stainless needs now — then get full details from your nearest M&T representative or dealer

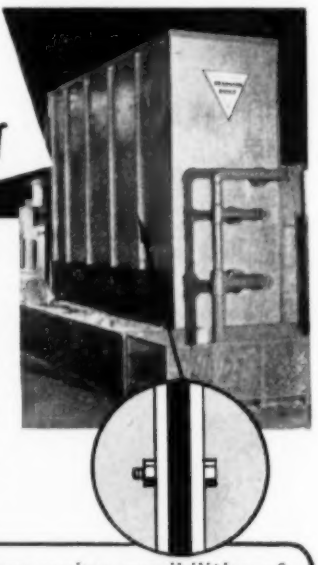
Smaller diameter rods furnished in 5-lb. cans. Larger diameter in 10-lb. cans.

DEGREASING
THERMIT WELDING
METALS and ALLOYS
ARC WELDING—Materials and Equipment
CHEMICALS and ANODES for Electroplating
CERAMIC OPACIFIERS
STABILIZERS for Plastics
TIN, ANTIMONY and ZIRCONIUM CHEMICALS

METAL & THERMIT CORPORATION
100 East 42nd Street • New York 17, N. Y.
MUREX ELECTRODES • ARC WELDERS • ACCESSORIES

If you write maker identify as IEN - 6830

DURKEE-ATWOOD
DOR-TITE KEEPS IT WATER-TIGHT



Says Despatch Oven Company Engineer

A leading producer of spray-paint booths, Despatch Oven Co., Minneapolis, uses Dor-Tite for water-tight gasketing between metal panels. Soft and resilient sponge rubber, Dor-Tite prevents seepage from the booth's water curtain . . . seals out dust and air. Dor-Tite cuts production costs because it comes in exact widths and thicknesses needed, requires no trimming, applies swiftly with its own factory-applied adhesive back.

Investigate the money-saving possibilities of DURKEE-ATWOOD DOR-TITE applications in your business . . . check its amazing versatility. DOR-TITE, because of its *patented built-in fabric base* does not stretch during application . . . does not creep back and pull loose after application as do many other types of sponge stripping.

Another D-A product: Bulk Sponge Rubber for industrial uses; to 36 inches wide; thickness ⅛ to 1 inch; in specified lengths.

DURKEE-ATWOOD COMPANY
Dept. S-8, Minneapolis 13, Minn.

If you write maker identify as IEN - 6831

VERTICAL or HORIZONTAL

THE MOST
COMPACT CONVEYOR
FOR BULK MATERIALS

FORT WORTH Screw Conveyors and vertical Screw Elevators provide the most compact means of conveying or elevating bulk materials, such as grain and other free flowing products. Space occupied is less than half that of most other types of conveyors.

Vertical screw elevators are used to lift materials up to 70 feet, depending on the nature of the product.

Initial cost is low.
A minimum amount of upkeep is required.

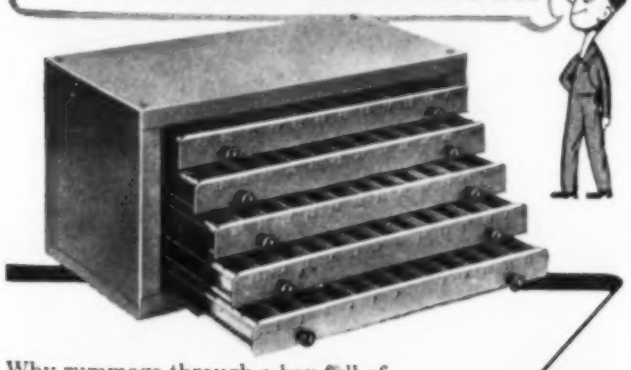
WRITE FOR CATALOG 2008

OTHER FORT WORTH PRODUCTS
V-BELT DRIVES
SCREW CONVEYORS and ACCESSORIES
SCREW ELEVATORS
INDUSTRIAL FANS

FORT WORTH
STEEL & MACHINERY CO.
DEPT. 26, 3600 McCART ST.
FORT WORTH, TEXAS

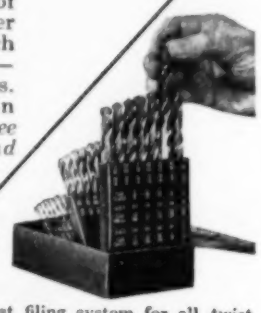
If you write maker identify as IEN - 6832

Drills at your fingertips—
HUOT DRILL DISPENSER



Why rummage through a box full of drills when the Huot Drill Dispenser will keep them sorted by sizes? Each compartment holds many drills—several dozen in the smaller sizes. Beautiful light gray hammerlin baked enamel finish. *Made in three models for fractional, number and letter drills.*

Write for Drill Dispenser Bulletin



HUOT DRILL INDEX

The simplest filing system for all twist drills. Panels fold into container like pages of a book. Seventeen models for drills from No. 80 wire gauge to 1-inch size.

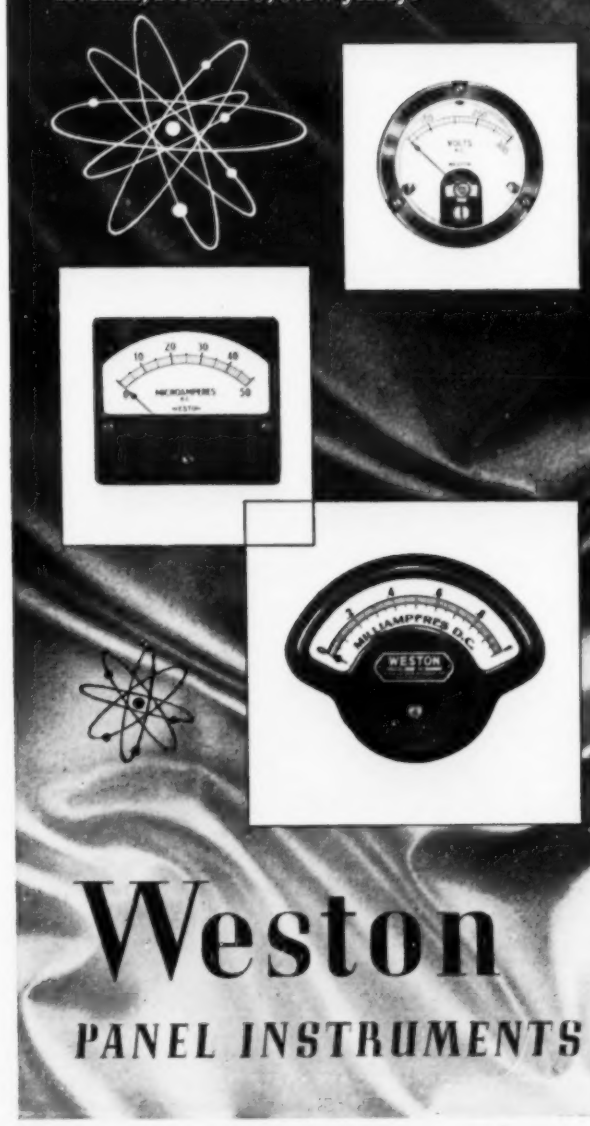
HUOT

HUOT MANUFACTURING CO.
565 North Wheeler Street, St. Paul 4, Minn.

If you write maker identify as IEN - 6833

Instruments that complement the high quality of fine electronic equipment

Available in all the types, sizes, and ranges for all electronic and electrical built-in requirements . . . including *approved* ruggedized panel instruments. Complete literature on request . . . WESTON Electrical Instrument Corporation, 614 Frelinghuysen Avenue, Newark 5, New Jersey.



Weston
PANEL INSTRUMENTS

NEW LITERATURE—Continued

Identify as IEN - 0398

ROOFS . . Alternate material for coal-tar roofing pitch is company's Special Roofing Bitumen. Detail illustrated application procedures are given in 16-page booklet. Ruberoid Co., 500 Fifth Ave., 34th Flr., New York 36, N. Y.

Identify as IEN - 0399

SCREWS . . Socket head cap screws apply with a hexagon wrench, have knurled heads, come in sizes from No. 0 to 1 inch. New 2-page Bulletin 876 gives a summary. Catalog 888, 40 pages, dated July 1952, gives detail information and list prices. Bristol Co., Griggs & Kelsey Sts., Waterbury 20, Conn.

Identify as IEN - 0400

SPEED REDUCERS . . Cone-Drive designs are shown at work in a variety of material-handling applications in 8-page picture Bulletin MH-53. Michigan Tool Co., Cone-Drive Div., 7169-73 E. McNichols Road, Detroit 12, Mich.

Identify as IEN - 0401

STATIC DISCHARGING . . Tufts of wire bristles on a grounded bar form the basis of the Magic Wand induction neutralizer for static electricity. Bulletin 125, 8 pages, describes how it works and where to mount it effectively. Herman H. Sticht Co., 24 Murray St., New York 7, N. Y.

Identify as IEN - 0402

STEEL BAR STOCK . . Cold-finished carbon-steel bars in round, square, hexagon shapes. How to select them, types and properties, relative cost, precautions in use, machining speeds, in 8-page "Cold Finished Bars". Joseph T. Ryerson & Son Inc., P. O. Box 8000-AA, Chicago 80, Ill.

Identify as IEN - 0403

TEST CHAMBERS . . Altitude from sea level to 80,000 ft., temperature from minus 100 to plus 200 deg. F., relative humidity from 20 to 90 per cent, are duplicated by Tenney-Zphere test chambers to check product performance. Bulletin 9081, 4 pages, dated 1951 but not previously publicized. Tenney Engineering Inc., 24-28 Ave. B, Newark 5, N. J.

Identify as IEN - 0404

TEST INSTRUMENTS . . Spectrophotometers in ultraviolet and visible types give qualitative and quantitative analyses of liquid, solid, gaseous samples including multi-component samples. Bulletin 303-5, 28-pages. Beckman Instruments Inc., 800 Mission, South Pasadena 1, Calif.

Identify as IEN - 0405

THREADING TOOLS . . 56-page pocket-size "Tap Manual" on tapping troubles and causes, screw thread data, tap drill sizes, speeds, lubricants, tap types and dimensions, tolerances, sharpening suggestions. Threadwell Tap & Die Co., 14-18 Arch St., Greenfield, Mass.

Identify as IEN - 0406

TRANSFORMERS . . Variac adjustable autotransformer now has a silver-alloy contact surface on the windings where the brush touches. This Duratrak construction is described in 12-page Bulletin 424-M on units to 120 amperes. General Radio Co., 273-77 Massachusetts Ave., Cambridge 39, Mass.

Identify as IEN - 0407

HAND TRUCKS . . Non-sparking non-magnetic aluminum construction suits them for handling explosives, food products, electronic equipment. 20-page catalog, "Lightweight Materials Handling Equipment", shows standard units. Tobey Mfg. Corp., 1219-23 El Segundo Blvd., El Segundo, Calif.

Identify as IEN - 0408

LIFT TRUCKS . . Two fork lift models, 5,000 and 6,000 lb. capacity at 24-in. load center, gasoline or diesel engine drive. Bulletins 1612 and 1602-A, 4 pages each. Buda Co., 15401 S. Commercial St., Harvey, Ill.

Identify as IEN - 0409

POWER TRUCKS . . Lift and platform models for a variety of material-handling tasks are illustrated in 16-page Exposition Issue of the company's house paper, "The Lever". Attachments, hand trucks are included also. Lewis-Shepard Products Inc., 190 Walnut St., Watertown 72, Mass.

Identify as IEN - 0410

TRUCK BODIES . . For rock, quarry, strip-mine haulage work in capacities to 30 cu. yd. and in end or side-dumping design. Telescopic hoists to 50 ton also are shown in 4-page Bulletin L-1. Hockensmith Corp., Penn Body Div., 453 Hockensmith Ave., Penn, Pa.

Identify as IEN - 0411

REGULATING VALVES . . Diaphragm-operated spring-opening and spring-closing valves, together with pneumatic control equipment, for reducing, relief, spill-over, load limiting, throttling, pump control. Bulletin S-22-CA, 12 pages. Swartwout Co., 18521 Euclid Ave., Cleveland 12, Ohio

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6835

COFFING NOW OFFERS—
a complete spur-gear line

Low-Head-Room Trolley Hoists 1½- to 24-ton capacities.

Available in capacities from ¼ to 25 tons. This new line consists of regular spur gear hoists, army and low head room trolley types (with either plain or geared trolleys), extended hand wheel, and clevis connected hoists.

Now your Coffing distributor can take care of all your spur geared hoist requirements. That means something to you, because you can depend on good Coffing quality and service, on this extended line, to lower your maintenance costs.

Contact your Coffing distributor or write us for bulletins and his address — Dept. P6.

Model YCT Timken Bearing Hoists ¼- to 25-ton capacities.

COFFING HOIST CO., Danville, Illinois

Quik-Lift Electric Hoists • Hoist-Alls • Safety-Pull Ratchet Lever Hoists • Mighty-Midget Pullers • Differential Chain Hoists • Load Binders • I-Beam Trolleys

If you write maker identify as IEN - 6836

SHIPPING COSTS GO DOWN
CORROSION LOSSES STOP
WITH MARVELLUM VPI® WRAP

• Time consuming slushing, expensive wraps and seals, messy and costly cleaning are no longer necessary if you use Marvellum VPI. Developed for Government shipments during the war, VPI is now available to all. It's the ideal wrap for shipping Ferrous metal parts. A special coating on the paper vaporizes and forms an invisible protective film around the item wrapped, preventing corrosion.

It is easy to use — just fold the paper over the part. Tight seals, rust-preventive oils, puncture-proof wrappings or direct contact with the chemical are not necessary. Yet Marvellum VPI protects against rust for years. Open the wrapping and there's the part as bright and clean as when it was made.

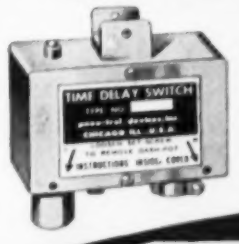
Marvellum VPI is available in sheets, envelopes or special containers. Marvellum has complete facilities under one roof for designing, coating and producing VPI Wraps. Also makers of a wide range of other Barrier Materials, Government Approved, for product protection.

Write for FREE Booklet and name of nearest distributor.

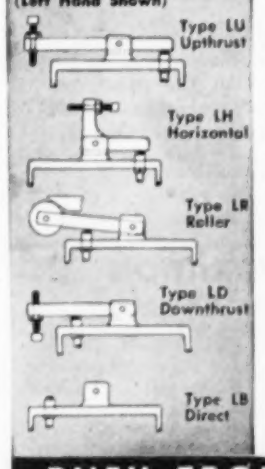
The Marvellum Company
20 APPLETON STREET HOLYOKE, MASS.
First and Foremost in VPI Protection

If you write maker identify as IEN - 6837

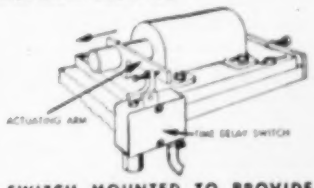
NEW CYLINDER TIME DELAY CONTROL SWITCH
INCREASES APPLICATION . . . WIDENS USE OF CYLINDER POWER



For Any Type Actuation Left or Right Hand (Left Hand Shown)



Pneu-Trol Time Delay Switches provide independent hydraulically controlled adjustable time dwell between ¼ and 60 seconds in 20 to 1 ratios. Readily mounted on machine for cylinder dwell at a positive stop. Compactly designed — a simplified low cost answer to electrical time dwell control of any air or hydraulically operated machine movement such as press work, burnishing, coating, quenching, metal-cutting, etc. Ideal for automatic feeders.
Dimensions: 4⅛" wide; 2⅜" high; 1-7/16" deep. Overall height 4⅛".



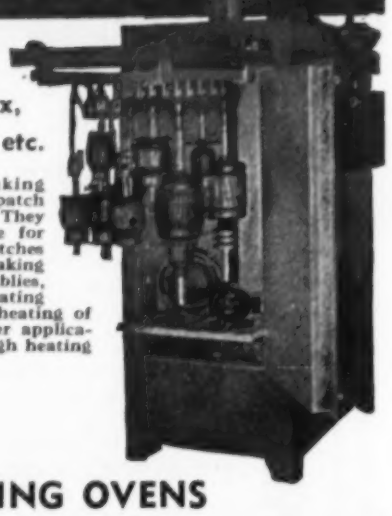
SWITCH MOUNTED TO PROVIDE DWELL AT END OF POWER STROKE

Write for descriptive literature and complete details.

PNEU-TROL DEVICES, INC.
1438 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 6838

50% FASTER BAKING ON REPAIR JOBS



Ideal for Synthetic Films, Dulux, Lacquer, Enamel, etc.

You can often cut baking time up to 50% with Despatch R S Batch Type Ovens. They are extremely adaptable for finish baking of small batches such as armatures; for baking paints on grilles, assemblies, etc.; for drying, dehydrating or core baking; for preheating of plastics, and many other applications where fast, thorough heating is required.

DESPATCH
R S Batch Type
FINISH BAKING OVENS

They're shipped fully erected and do not require an engineer to set them up. Gas or oil fired, very economical, with working range from 200° to 500° F. Automatic heat control for desired uniform temperature. Sizes from 11 to 90 cu. ft. capacity, all easy to load and unload. When writing for literature, kindly tell us what type of work you have.

Write for Bulletin on R S Ovens.

DESPATCH OVEN CO. Established in 1902

Manufacturers of ovens for: Paint Finishing, Dehydrating, Curing, All Industrial and Laboratory Applications

337 DESPATCH BLDG., MINNEAPOLIS 14, MINNESOTA

If you write maker identify as IEN - 6839

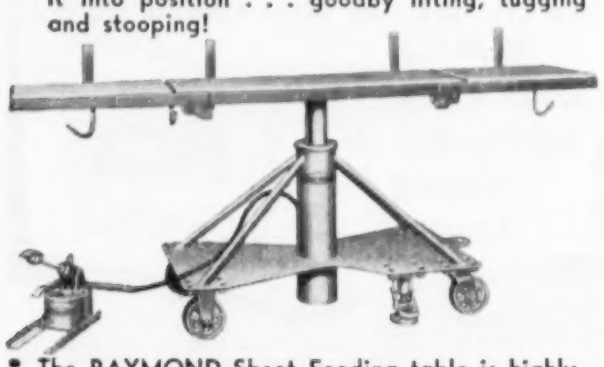
DON'T HAMPER HIM

with Hydraulically-operated

RAYMOND

SHEET & STRIP FEEDING TABLES

- Watch work speed up when you replace makeshift handling arrangements with this RAYMOND Hydraulic Sheet Feeding Table! Why? Because this table banishes unnecessary handling, reduces fatigue, eliminates hazards. Hydraulic power elevates material to the correct working level. The operator simply slides it into position . . . goodby lifting, tugging and stooping!



- The RAYMOND Sheet Feeding table is highly portable. Load it up with dies or material in storage, then tow it directly to the machine. It's available with foot pump or electric-driven power pump with flat or tilting top. Capacities from 2,000 to 20,000 lbs.

MAIL THIS COUPON . . . Get Bulletin 262 . . . it gives you the facts on RAYMOND Sheet Feeding Tables!

The RAYMOND CORPORATION
3508 Madison St., Greene, N.Y.

Please send me Bulletin 262, showing your complete line of Sheet Feeding Tables.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

NEW LITERATURE—Continued

Identify as IEN - 0412

MILLING MACHINE . . Automatic machine has three stations and one head to do load and unload operations, duplex milling, double-end center drilling simultaneously. Drawings of sample parts in 4-page Bulletin 2000 have production figures. Motch & Merryweather Machy. Co., 715 Penton Bldg., Cleveland 13, Ohio

Identify as IEN - 0413

CASTING PLASTIC . . Liquid phenolic casting resin finds use in short-run production, model or prototype work, foundry patterns, special parts. Instructions in 16-page "Casting Resin" booklet, copyright 1951 but not announced previously, covers mold making, mixing, casting, inserts. Durez Plastics & Chemicals Inc., 6 Walck Road, North Tonawanda, N. Y.

Identify as IEN - 0414

EXTRUDED PLASTICS . . Sheets, tubes and functional shapes in eight types of thermoplastic materials from cellulose acetate to polyethylene. Summary chart and picture applications in 8-page bulletin. Midwest Plastic Products Co., 1803 Chicago Road, Chicago Heights, Ill.

Identify as IEN - 0415

PLASTIC FILM . . Mylar polyester film has good electrical, physical and corrosion-resisting properties. They are given by charts, diagrams and tables in new 14-sheet Technical Bulletin 1-2-53. Film Dept., E. I. du Pont de Nemours & Co., 2518 Nemours Bldg., Wilmington 98, Del.

Identify as IEN - 0416

PLATING . . Anodes, bags, chemicals and processes for cadmium, copper, lead, nickel, silver, tin, zinc plating along with recommendations in 16-page Bulletin AC-107. Hanson-Van Winkle-Munning Co., 100 Filbag St., Matawan, N. J.

Identify as IEN - 0417

PRESS TOOLS . . Notching units for mild steel to ¼ in. in thickness mount independently so you can arrange them as required for a desired pattern. Catalog N, 20 pages, shows a number of types including one for angle iron. Wales-Strippit Corp., 361 Payne Ave., North Tonawanda, N. Y.

Identify as IEN - 0418

HORN PRESSES . . Six models from 45 to 200 ton, all with welded steel frames. Suggestions on adaptability to a variety of work, excellent cut-away views on major components, specifications in 16-page Bulletin 223. Clearing Machine Corp., 6491 W. 65th St., Chicago 38, Ill.

Identify as IEN - 0419

PRINTING EQUIPMENT . . Photocopy method of making many duplicate prints from a translucent original is applied to purchasing-receiving-paying operations. Bulletin, 6 pages, outlines how to go about it. Ozalid Division, General Aniline & Film Corp., 18-22 Ansco Road, Johnson City, N. Y.

Identify as IEN - 0420

PROCESSING . . Heat exchangers, pressure vessels, fabricated piping for chemical process and oil-field service. Picture booklet, "Industrial Process Equipment", shows facilities. McJunkin Corp., Box 513-A, Charleston 22, W. Va.

Identify as IEN - 0421

DEEP WELL PUMP . . Transparent plastic printed pages enable you to take the company's submersible centrifugal pump apart piece by piece in new 16-page "Submerga" catalog. The pump has an integral sealed motor that lowers into a well. The catalog is available only to qualified individuals on letterhead request. It lists at $1 otherwise. Red Jacket Mfg. Co., 2745-49 Rockingham Road, Davenport, Iowa

Identify as IEN - 0422

RAILS . . New and relaying rails from 12 to 175-lb. sections are illustrated by actual-size dimension drawings in 44-page Catalog 575 along with angle bars and splice bars. L. B. Foster Co., P. O. Box 1647-A, Pittsburgh 30, Pa.

Identify as IEN - 0423

REAMERS . . Chucking, taper pin, die-makers, hand, expansion, shell reamers, also arbors, reamer blanks, engraving cutters, and matched sets. Catalog 53, 40 pages. Lavallee & Ide Inc., 100 Grape St., Chicopee, Mass.

Identify as IEN - 0424

RELAYS . . Power, photoflash, latching, plate-circuit, impulse, telephone-type, motor-starting, sensitive, 400-cycle, midget, hermetically-sealed relays, also contactors and shaded-pole motors. Data in 24-page Catalog 122. Potter & Brumfield, 221 N. Main St., Princeton, Ind.

Identify as IEN - 0425

RELAYS . . Midget telephone type: Bulletin 11, 4 pages, contact diagrams and characteristics on short-form dc. units. Bulletin 22, 4 pages, on long-form ac. or dc. units. Magnecraft Electric Co., 1448-52 W. Van Buren St., Chicago 7, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6841

Now...Spring Makers and Spring Users alike have a Uniform Method for Testing Springs!

THE TORRINGTON SPRING TESTER

Uses: for accurate inspection, in-use testing, designing springs for specific uses, and as a basis for statistical quality control.

Simple: can be used at operating levels by relatively inexperienced personnel. Portable!

Accurate: 2 models—the 3 pound model measures loads to the nearest 1/100 ounce, and the 16 pound model to the nearest 1/5 ounce; lengths and deflections to 1/1000 inch.

Fast: requires minimum time to adjust for accurate readings, or to reset for other springs.

Practical: measures under conditions approximating actual use, through interchangeable fittings.

High sensitivity: over a wide range, on both tension and compression types of springs.

For complete information please write:

TORRINGTON MANUFACTURING COMPANY TORRINGTON, CONNECTICUT

WORLD'S LARGEST BUILDERS OF SPRINGMAKING MACHINERY

If you write maker identify as IEN - 6842

DO THESE NEW Reuland motors FIT INTO YOUR PICTURE?

(cut-away view)

FLUID-SHAFT MOTOR — Provides smooth acceleration of heavy loads. More compact than separate motor and fluid coupling. *Perfect alignment!* Thousands in use on cranes, mixers, centrifugals, etc.

FLUID-SHAFT MOTOREDUCER — This Fluid-Shaft motor and gear reducer combination converts the motor's conventional high speed into a slow speed, smooth starting, compact unit. Ideal for car pullers, conveyers, dryers, etc.

MAGNETIC BRAKE — The only brake that permits the use of TWO output shafts per motor. *When desired the motor shaft can be extended right through!* Only 6 major parts...no levers or linkage . . . self adjusting . . . half usual length!

Write for new engineering folder on these and other *exclusive* Reuland Products... *industrial units designed to fill the needs of the nation's leading equipment manufacturers!*

REULAND ELECTRIC COMPANY ALHAMBRA, CALIF.
Representatives in all principal cities
FIRST IN QUALITY . . . FIRST IN DESIGN

If you write maker identify as IEN - 6843

Engineered for leak-free, trouble-free, maintenance-free performance

DeZURIK EASY-OPERATING PLUG VALVES

Non-lubricated, opens and closes with a quarter-turn.

DeZURIK SHOWER CO.
SARTELL, MINNESOTA

If you write maker identify as IEN - 6844

EASTON

a dependable design and construction service in industrial cars

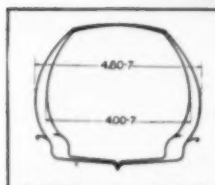
EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

NEW YORK • PHILADELPHIA • PITTSBURGH

If you write maker identify as IEN - 6845

HERE ARE SOME OF THE BIG ADVANTAGES YOU GET WITH GOODYEAR WIDE BASE TIRES

Wide, flatter tread—longer wear
Lower cost per mile
Low rolling resistance
Greater cross-section—more air volume
Increased flotation
Greater stability



280/250 x 4	480/400 x 7
340/300 x 5	480/400 x 8
340/300 x 7	530/450 x 7
410/350 x 6	570/500 x 8

Here are the sizes of Goodyear tires that fit the new Wide Base Rims. Note, for example, in the new size marking, the 400 x 7 is now marked 480/400 x 7.

Goodyear now offers a complete line of

PNEUMATIC INDUSTRIAL TIRES

for Wide Base (Super Width) Rims

To meet your particular needs, Goodyear now offers a complete line of Pneumatic Industrial Tires to fit the new Wide Base Rims. These sturdy tires with the wide, flatter tread and increased air volume offer low rolling resistance, greater stability and longer wear.

Goodyear will be glad to send a fully qualified technical expert to your plant—to analyze your operation and recommend the most efficient type of tire for your service. His services are free, of course. To bring him, write:

Goodyear, Industrial Tire Sales, Akron 16, Ohio.

GOODYEAR

INDUSTRIAL TIRES

If you write maker identify as IEN - 6847

REFRIGERATING . . Freon compressor employs refrigerant gas to cool motor

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Ask for Bulletin 2130

Capacity is about 57 ton and input rating is 50 to 60 hp. in this new Type CLS-2100 assembly in the company's line of hermetically sealed refrigerant-cooled compressors. It is recommended for operation where suction temperature is between 10 and 50 deg. F. with condensing temperature not more than 117 deg. F. Typical appearance is illustrated.

The machine is single acting V-type four-cylinder design operating at 1,180 rpm. It is equipped with cylinder unloaders to provide for variation in capacity and with a high to low-side relief valve and a high-low pressure cut-out switch to protect against abnormal pressure. A gear pump lubricates positively for either direction of rotation. The line-start motor can be specified for two or three-phase power input.

Refrigerant gas is drawn in through the crankshaft mounted motor after passing through a strainer. It cools the motor and enters a manifold which delivers it to the cylinder heads. It passes through valves into the cylinders for discharge at the end opposite to the motor. A water cooled condenser, meeting ASME requirements for unfired pressure vessels, is available. Several sizes of evaporative condenser also can be specified. The overall design permits access to all components for field inspection and maintenance without special tools.

If you write maker identify as IEN - 6848

SEALING . . Victoprene O-rings for moving and stationary mechanisms

Source: VICTOR MFG. & GASKET CO.
P. O. Box A-1333, Chicago 90, Ill.

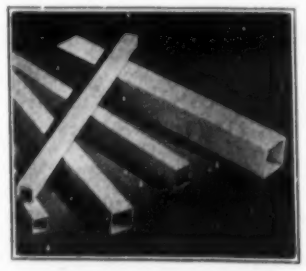
Catalog 700 upon request

New line consists of 87 stock sizes measuring ⅛ by ¼ by 1/16 in. to 15½ by 16¼ in., for moving and non-moving mechanisms, plus 52 additional sizes for non-moving applications only. The rings are packaged in cartons of 10 to 200 units for replacement use. The material is the company's Victoprene synthetic rubber compound.

If you write maker identify as IEN - 6849

INSULATING . . Paper tubes for electrical coils, are spiral wound

Source: PARAMOUNT PAPER TUBE CO.
612-16 Lafayette St., Fort Wayne 2, Ind.



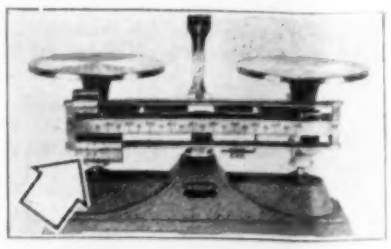
2000 stock arbors

Kraft, fish paper, red rope, acetate, or any combination of treated paper is wound on square or rectangular arbors in manufacture of the new Paraformed paper tubes on which to wind electric coils. The rectangular units range from ½ to 30 in. in length and from 0.450 to 25 in. in inside perimeter. The finished tube is characterized by its freedom from sharp outside edges, its rigidity and its physical strength.

If you write maker identify as IEN - 6850

WEIGHING . . Balance type scale, poise replaces separate weights

Source: OHAUS SCALE CORP.
1046 Commerce Ave., Union, N. J.



Arrow indicates poise

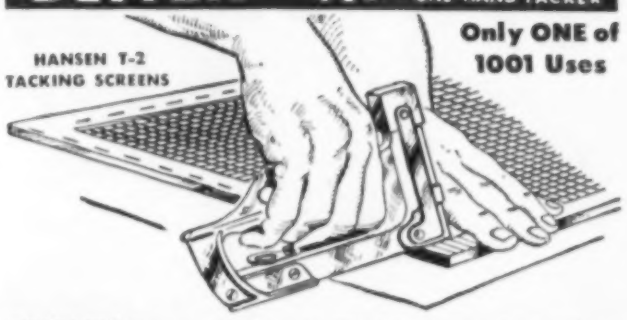
Graduated poise beneath the beam in this new industrial scale ride on a lead screw. It is adjusted longitudinally by rotating. Its barrel is calibrated in 0.5-gm. increments which subdivide the 10-gm. beam divisions. The poise makes it possible to use the scale for a weighing range between 0.5 and 1,000 gm. without requiring separate weights.

The stainless steel plates are 7 in. in diameter. Scale capacity is to 5,000 grams. The balance has an undivided tare beam of 1-lb. capacity. Moving parts are mounted on self-aligning bearings made of agate and knife edges of precision hollow ground tool steel. Two 9-in. nickel plated brass pans can be specified, or a seamless brass scoop measuring 15 by 7½ by 4¼ in. to replace one of the plates.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6851

YOU CAN DO IT BETTER with HANSEN ONE-HAND TACKER



Only ONE of 1001 Uses

FASTER! Screen Tacking is illustrated merely to show the *versatility* of the Hansen Tacker. It is adaptable to a wide variety of uses . . . saves *time, steps, materials!*

BETTER! With Hansen you place the Tacker accurately in driving position . . . exactly where you want it. Grip the handle. The Tacker drives the staple with precision and accuracy. Powerful action drives each staple securely.

AT LESS COST! Portable . . . self-contained . . . easy to operate . . . balanced design . . . removable Take-up Jaw . . . are Hansen features that cut costs.

36 MODELS
80 STAPLE SIZES

(Model T-3-4 Hansen Tacker)

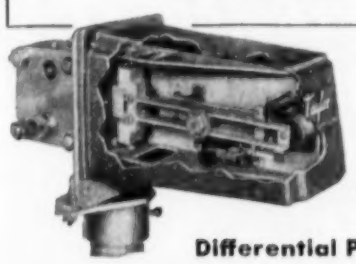
Request Booklet . . . today

A.L. HANSEN MFG. CO.

5051 RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS

If you write maker identify as IEN - 6852

FLOW MEASUREMENT SIMPLIFIED!



With the New Taylor TRANSAIRE* Differential Pressure Transmitter

A STREAMLINED, light-weight pneumatic transmitter, designed to meet present day requirements for a rugged, dependable and accurate instrument to measure flow, liquid level, or specific gravity. Compact design, force-balance action, dry (mercuryless) type. Ten-to-one adjustability in each of two ranges: 20-200" water; 80-800" water. Inexpensive, simple to install. Economical and easy to maintain.

Ask your Taylor Field Engineer for full details of this new transmitter, or write for **Bulletin 98226.** Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

*Reg. U. S. Pat. Off.

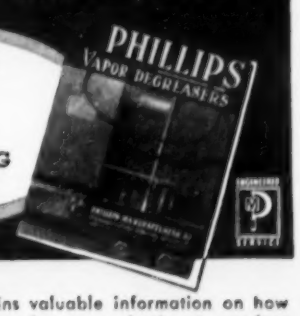
TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN - 6853

PHILLIPS

LEARN HOW VAPOR DEGREASING CAN CUT COSTS AND INCREASE YOUR PRODUCTION

SEND FOR YOUR FREE COPY OF PHILLIPS' NEW DEGREASING BULLETIN



HERE's a new bulletin that contains valuable information on how modern vapor degreasing speeds up production in modern factories by making metal cleaning operations faster and more economical. Listed below are some of the features of this new book:

WHAT DEGREASING IS — A full description of what vapor degreasing is and what it will accomplish for you.

HOW DEGREASERS WORK — A series of photographs and written description shows what happens in the degreasing process.

DEGREASER APPLICATIONS — Illustrates number of different applications of degreasers to solve metal cleaning problems in various industries.

COMPLETE LINE OF STANDARD DEGREASERS — Describes Phillips' full line of standard equipment, including batch type, combination, rotomatic, and conveyorized models.

SPECIALLY ENGINEERED UNITS — Tells about Phillips' service in designing special degreasing units for solving unique metal cleaning problems.

Phillips 3461 Touhy Avenue • Chicago 45, Illinois
MANUFACTURING COMPANY
Engineered Metal Cleaning Equipment

If you write maker identify as IEN - 6854

NEW • NEW • NEW • NEW • NEW • NEW

AUTOMATIC SAFETY FEATURE

LINEMASTER

"LEKTRO-LOK" FOOT SWITCH

If you need a foot switch that's small, sensitive, safe, choose Lektro-Lok. Mechanical interlock allows only one circuit to function at a time. Operates on teeter-totter principle with selective circuits — yet single cord receptacle cuts costly harness assemblies.

Lektro-Lok weighs only 10 oz. Made to take it—rugged stamped metal case. It's the new modern, SAFE foot switch from Linemaster, the Leader!

ONLY $5.25 (less in quantities)

Let us quote on your special problems

Write today for folder and price list

LINEMASTER the leader

LINEMASTER SWITCH CORPORATION
124 Putnam Road • WOODSTOCK, CONNECTICUT

If you write maker identify as IEN - 6855

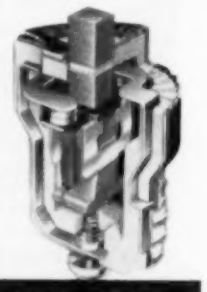
Modernize with

MINI-BREAKER®

. . . the amazing new Permanent Circuit Protector that fits like a fuse in standard Edison base fuse sockets!

Time was when converting "one shot" fuse-protected circuits to a modern permanent type installation was a costly, complicated job. But not so today! Now anyone can do it in a matter of seconds simply by installing amazing new MINI-BREAKERS as *direct replacements* for expendable Edison base fuses . . . and right in existing fuse boxes, too! No additional equipment to buy, no special wiring required, no extra costs of any kind!

NEW SAFETY! NEW CONVENIENCE! MINI-BREAKERS give you positive, pre-tested protection against electrical fire hazards. They trip instantly on "shorts", but have a built-in time lag to handle temporary starting loads and line surges. 100% trip-free, too. Yet, as soon as the circuit is safe again, all you have to do to restore electrical service is press in and release the shock-proof reset button!



LISTED BY U.L.! MINI-BREAKER is a precision-built, inspected "Circuit Protector" . . . the only device of its kind listed by Underwriters' Laboratories, Inc.! Available in 15, 20, and 30 ampere ratings, for A.C. service only, to 125 volt maximum.

See your Electrical Wholesaler-Distributor or send for complete information today

MECHANICAL PRODUCTS, INC.
1824 River Street • Jackson, Michigan

Please rush me full details on new MINI-BREAKER today!

NAME _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

NEW LITERATURE—Continued

Identify as IEN - 0426

GRINDING STONES . . To clean commutators and slip rings, also to clean machine rolls while in operation. Handle designs, standard sizes in 4-page Bulletin, also connectors. H. F. Hunter Sales, 313 Cypress Way, Pittsburgh 28, Pa.

Identify as IEN - 0427

GRINDING TOOLS . . Pneumatic grinders, drills, screwdrivers, sanders, circular and chain saws. Catalog 70, 28 pages, presents data on 35 models and attachments. Mall Tool Co., 7725 S. Chicago Ave., Chicago 19, Ill.

Identify as IEN - 0428

UNIT HEATERS . . Stationary and revolving electric heaters and heater sections of 4 to 60-kw. rating are in new 8-page Bulletin E-1. L. J. Wing Mfg. Co., 158-62 Vreeland Mills Road, Linden, N. J.

Identify as IEN - 0429

METAL HOSE . . Seamless corrugated and interlocked types of flexible metal hose and tubes, also braid-reinforced hydraulic hose. Data Book U-111, 24 pages. Universal Metal Hose Co., 2131-35 S. Kedzie Ave., Chicago 23, Ill.

Identify as IEN - 0430

PIPE INSULATION . . Application procedure for 85 per cent magnesia pipe covering, recommended thickness by service temperature, in 8-page "Thermalite" bulletin. Ehret Magnesia Mfg. Co., 51 Ehret St., Valley Forge, Pa.

Identify as IEN - 0431

HANDLING . . Trays, racks, fixtures, crates, baskets to handle work in heating, heat treating, processing; also muffles, tanks. Pocket folder, "Fact File," 14 pages. Allied Metal Specialties, 514-18 N. Charles St., Baltimore 1, Md.

Identify as IEN - 0432

HANDLING . . Baskets, trays, fixtures in wire and metal for dipping, pickling, conveying, handling of parts. Some are rubber coated. Catalog MS-52, 8 pages. Wire & Iron Products Inc., 1723-27 Sixteenth St., Detroit 16, Mich.

Identify as IEN - 0433

HEAT TREATING . . Trays and fixtures of cast Thermalloy nickel-chromium alloys hold work for carburizing. Bulletin T-227, 6 pages. American Brake Shoe Co., Electro-Alloys Div., Abbey Road & Taylor St., Elyria, Ohio

Identify as IEN - 0434

INSULATING VARNISHES . . Baking and air-drying types of Tuffernell electrical insulating varnishes, paints, enamels. Twelve-page Application Data Book 65-120 presents recommended use data. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Identify as IEN - 0435

VIBRATION ISOLATION . . All-metal shock mounts for electronic equipment, standard and specification designs. Bulletin 750, 16 pages, uses pictures to show what vibration will do to an electronic tube waveform as an example. Robinson Aviation Inc., 49 Industrial Ave., Teterboro, N. J.

Identify as IEN - 0436

VIBRATION ISOLATION . . Glass-fiber material was developed for ordnance use, now is available for civilian use as shock and vibration mounts, pads and cushions, sealing strips. Bulletin VG-1, 8 pages, gives load-deflection curves. Vibradamp Corp., 3415-19 W. 8th St., Los Angeles 5, Calif.

Identify as IEN - 0437

PERMANENT MAGNETS . . Available in Alnico 2, 3 and Alnico 5 alloys and in stock bar, rotor, and horseshoe shapes. Full-scale drawings in 12-page Standard Magnet Catalog 1252, also a magnet charger. Thomas & Skinner Steel Products Co., 1163 E. 23rd St., Indianapolis 5, Ind.

Identify as IEN - 0438

FLOW METER . . Indicating, recording and totalizing unit for water, gas, air, industrial liquids is based on a mercury-displacement principle. How this works, construction points, sizes are given in 20-page Bulletin 401, copyright 1950 but not announced previously. Simplex Valve & Meter Co., 6717 Upland St., Philadelphia 42, Pa.

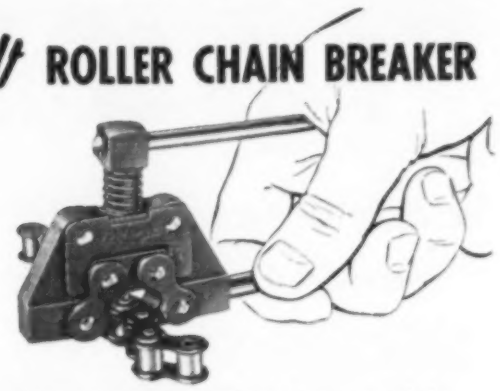
Identify as IEN - 0439

WATER METER . . Combination unit measures flow from a trickle to a torrent by means of a positive-displacement element and a velocity element in one housing with a single register. Ten-page Bulletin W-803 Rev. 2 shows how. Rockwell Mfg. Co., 624 N. Lexington Ave., Pittsburgh 21, Pa.

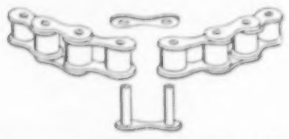
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6857

New ROLLER CHAIN BREAKER



BREAK CHAIN IN SECONDS without damage to chain.



BREAKS ANY SIZE CHAIN No. 25 to No. 60.

BOSTON GEAR QUALITY THROUGHOUT Vital parts heat treated for wear-resistance and high strength.

AT YOUR BOSTON Gear DISTRIBUTOR Ask for new Chain Breaker folder. Explains simple operation.

Boston Gear Works, 63 Hayward St., Quincy 71, Mass.

BOSTON Gear
POWER TRANSMISSION PRODUCTS

If you write maker identify as IEN - 6858

For "Unbroken" Service . . . Steady Production

Quaker

CONVEYOR BELTING

Round the clock production! It's yours with Quaker belting for long hauls, short pulls, tough loads or steep inclines. Carefully engineered and rigidly pretested for exceptional resistance to high flexing, tension and wear. Tough, highest quality rubber encloses desired number of friction plies uniformly tensioned for safe overall shock absorption. In any desired weight or cover thickness for wet or dry conveying.

Write for name of nearest Quaker distributor

QUAKER RUBBER CORPORATION
DIVISION OF H. K. PORTER COMPANY, INC.
OF PITTSBURGH
Dept. E, Philadelphia 24, Pa.
Branches in Principal Cities

If you write maker identify as IEN - 6859

NOW . . . 2 TYPES OF READY-POWER DRIVE

GAS-ELECTRIC DIESEL-ELECTRIC

GAS-ELECTRIC Models are for the tough materials handling jobs . . . DIESEL-ELECTRIC Models master the "impossible" jobs that keep trucks going day and nite, year after year.

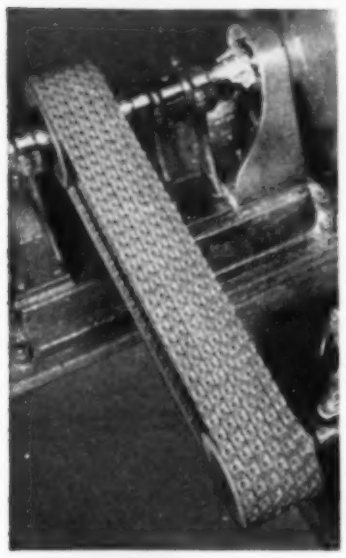
CONTINUOUS POWER FOR ALL ELECTRIC TRUCKS

CONTINUOUS-DUTY POWER UNITS

The READY-POWER Co.
3830 Grand River Ave., Detroit 8, Michigan
Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

If you write maker identify as IEN - 6860

Test these 3 "E's" of Veelos in your plant



Ease of Installation—the link construction of Veelos makes it easy to install without re-setting the motor or tearing down outboard bearings. Installation time is often cut 50% to 90% over endless v-belts.

Efficiency of Operation—because individual Veelos v-belts can be adjusted for correct tension, matched sets can be kept matched; vibrationless, full power delivery is assured.

Economy of Inventory—just 4 reels of Veelos in the 0, A, B and C widths can replace up to 316 different sizes of endless v-belts. Inventory is simplified, costly belt deterioration is eliminated and you save valuable stockroom storage space.

VEELOS DATA BOOK
Here's the complete story on Veelos, the adjustable v-belt. Write for your copy today!

VEELOS THE LINK V-BELT

MANHEIM MANUFACTURING AND BELTING CO.
651 Manbel Street, Manheim, Pa.

Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 6861

ARE YOU MISSING A CHANCE TO MAKE IT BETTER AT LESS COST

Scores of industries have successfully applied our newly developed forest products to their manufacturing processes, often resulting in important improvements and economies. It may pay you to investigate.

SILVACEL Industrial Fibers

SILVACEL can be manufactured to specifications involving an almost endless variety of chemical and physical mixtures — and produced in automatically controlled plants. A few current uses are:

- Filters — Paper & Fill Types
- Insulation — Low Temperature, Water Heater & Building
- Paper Stock — Saturating and Specialties
- Pulp Molding
- Battery Separators
- Oil Well Drilling

SILVACON* Bark Fractions

A few current uses of Silvacon Bark Fractions are:

- Phenolic Glue Extension
- Phenolic Molding Compounds
- Asphalt Products
- Insecticides
- Magnesite Flooring
- Rubber Products
- Wadding
- Foundry Sands
- Seed Cleaning
- Fertilizers
- Thermoplastics
- Oil Well Drilling

*T. M. REG. U. S. PAT. OFF.

Write for samples and technical data
Field engineering service on request

Special Products Division

WEYERHAEUSER TIMBER COMPANY
Tacoma, Washington

If you write maker identify as IEN - 6863

CLEANING . . Washing machine handles work in timed immersion cycle

Source: IPSEN INDUSTRIES INC.
713-17 S. Main St., Rockford, Ill.

Timer controlled

Work pieces are loaded into a screen rack that rides into place on an elevator in this new Series-W washing machine. The elevator, operated by air hydraulic pressure, lowers the load into the solution tank and actuates a motor driven propeller. It begins rapid circulation of the heated solution past curving baffles down through the work basket. The downward circulation prevents displacement of small parts. It continues for a preset interval and then shuts off.

At this point a surface spray skims floating impurities from the surface of the solution into an overflow drain. It opens for the skim-off interval so the elevator can raise the work without picking up any of the impurities. Thus no additional rinsing operation is required. The rack, with the clean work, holds in up position until the operator removes it either to the front or to the back, the latter in through-feed operation. A spring loaded plate on the bottom of the rack seals off the load from the heated solution after it has been raised and until it is moved out of the housing.

The machine is equipped with a raised slanting bottom to assist in draining and cleaning. It is available in three sizes with load area measuring 24 by 36 by 12 in., 24 by 36 by 18 in., and 30 by 48 by 20 inches. Tank capacity is 250 to 400 gallons. Load rating is 300, 400, and 700 pounds. Heat for the cleaning solution can be specified for gas, electric or steam.

If you write maker identify as IEN - 6864

CUTTING . . Abrasive discs for concrete, brick, tile, stone

Source: CLIPPER MFG. CO.
2802 Warwick, Suite 650, Kansas City 8, Mo.

Particularly for construction work

The company announces development of new abrasive discs that will cut masonry materials with speeds approaching those possible with diamond discs. The new units will cut through a 2 by 5-in. furring tile in 11 sec., through a first quality dry press fire brick in 5 sec., through a concrete block in 17 seconds. The discs operate wet. They are made with steel centers and are available in a range of diameters from 8 to 18 inches.

If you write maker identify as IEN - 6865

MOTOR . . Miniature synchronous with geared head for slow speed drive

Source: BRISTOL MOTOR DIVISION
164 Coulter St., Old Saybrook, Conn.

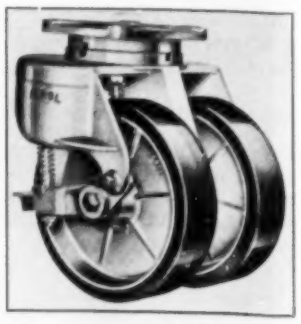
Circle B design

Series S-200 is new design of the synchronous motor, previously described IEN-7688-51, in which output was rated at 16 in. oz. at 1 rpm. The new assembly includes a geared head that can be specified with output speed from 10 rph. down to 1 revolution per month. Overall dimensions are 2 by 1⅝ in. for the new motor.

If you write maker identify as IEN - 6866

CASTER . . Knee action design cushions load over a rough surface

Source: AEROL CO.
2422-26 San Fernando Road, Los Angeles 65, Calif.



Shock absorbing

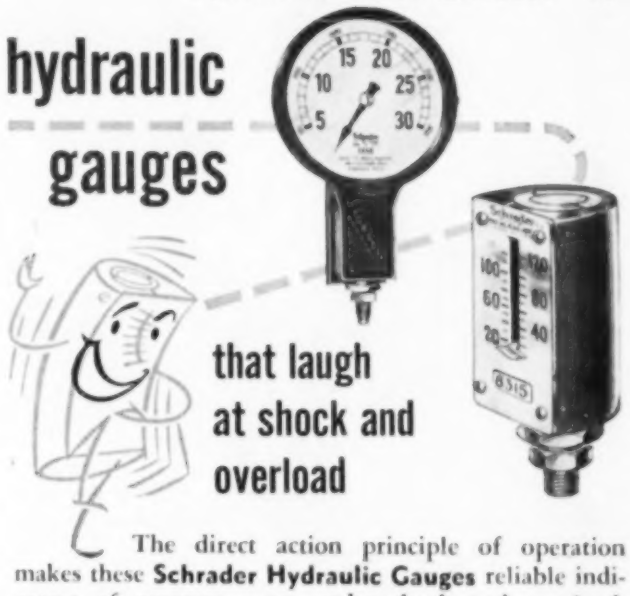
Springs take the load weight on this new caster, in connection with a pivoted arm in which the wheels are assembled in the main swivel housing. The caster cushions movement over a rough surface and keeps its two wheels in constant ground contact. The springs can be changed in the field for varying load requirements on the caster.

Standard assembly employs 12-in. rubber tired aluminum wheels in an aluminum housing with a swivel bearing plate. Load capacity is to 2,000 pounds. Timken thrust bearings and tapered roller bearings are standard components in the caster design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6867

hydraulic gauges that laugh at shock and overload



The direct action principle of operation makes these **Schrader Hydraulic Gauges** reliable indicators of pressure, even under shock and overload. Easily installed, these gauges are also easy to maintain. The Schrader catalog describes the full line of Schrader Hydraulic Pressure Gauges, as well as Schrader air line equipment. A copy is yours for the asking. Write for it today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-31 Brooklyn 38, N. Y.

If you write maker identify as IEN - 6868

SEND FOR THIS NEW BULLETIN

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

Write for New FREE Bulletin. 265

DRYING and CONCENTRATING CO.
332 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 6869

Accuracy in Surfaces from which Measurements start is IMPORTANT

To be certain, specify G. S. Surface Plates and Angle Irons

CAST IRON

G.S. Cast Iron Plates are scientifically ribbed and hand scraped by outstanding experts.

OR

BLACK GRANITE
MICRO-FLAT
"The Gift of Nature"

Black granite is the hardest material nature has provided.
.00005" or .0001" Surface Precision.

We carry the finest in both materials to fill your need for every requirement.

WRITE FOR ILLUSTRATED FOLDER

INTERESTING PROPOSITION FOR DEALERS EVERYWHERE

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
200-EN LAFAYETTE ST. • NEW YORK 12, N. Y.

If you write maker identify as IEN - 6870

Why TAP-LOK* INSERTS have the edge on other threaded bushings

This CUTTING EDGE taps the thread

Insert is driven into drilled or cored hole equal in size to tap drill hole for external thread.

SAVES separate tapping operation. Withstands vibration without loosening. Has maximum torque-and-pull resistance. For original equipment, salvage or maintenance applications.

Send for descriptive folder

Also manufacturers of Groov-Pins for positive locking press fit.

*Reg. U.S. Pat. Off.

GROOV-PIN CORPORATION

1127 Hendricks Causeway • Ridgefield, New Jersey

If you write maker identify as IEN - 6871

BORSUDS HEAVY-DUTY BORAX-TYPE HAND CLEANER

BORSUDS' grime-chasing agent, borax, is completely soluble — will not clog drains. Combining borax with the finest medium and low titer neutral toilet soaps, Dolge has developed a product sure to find favor with factory and office personnel alike. Agreeable to use, gentle to the skin, quick-acting against the most ingrained grime, BORSUDS comes in convenient 5-lb. packages, or in bulk for even greater economy.

Your Dolge Service Man will gladly demonstrate BORSUDS under your own shop or office conditions.

FOR FREE SANITARY SURVEY of your premises consult your DOLGE SERVICE MAN

dependable DOLGE

WESTPORT, CONNECTICUT

If you write maker identify as IEN - 6872

RUBBER INSULATED CLIPS, CLAMPS AND PARTS (Standard or Special)

ARco

For

Cable, Loom, Tube, Wire Rod and Pipe

● ARco rubber-insulated metal parts offer a utility value that far exceeds their reasonable cost. Greater durability and wider function in terms of *electrical and sound insulation, corrosion and abrasion resistance* are only a few of the service superiorities that ARco insulated parts can add to your product.

Call for a consultation with our thoroughly experienced Engineers now. Ask them to show you how you can improve your product with a low-cost ARco rubber-insulated metal part. Better yet, send us one of your standard parts for a sample rubber insulation and a quantity estimate. No obligation.

WRITE FOR THIS VALUABLE INFORMATION! You will find many ways in which you can improve design, engineering and production in this literature which is yours on request. Write today.

AUTOMOTIVE RUBBER CO., INC.
8505 EPWORTH BLVD. DETROIT 4, MICHIGAN

ARCO RUBBER PROCESSORS
4033 HOMESTEAD ROAD • HOUSTON, TEXAS

ANYTHING CAN BE COVERED WITH RUBBER — BY ARco

MANUFACTURERS • DESIGNERS • ENGINEERS

NEW LITERATURE—Continued

Identify as IEN - 0440

ELECTRIC CONNECTORS . . Swaged-on terminals, connectors, socket contacts for motor vehicles and other equipment; automotive switches. "Electrical Products", 40 pages. Douglas Mfg. Div., 453 Kingston Ave., Bronson, Mich.

Identify as IEN - 0441

ELECTRIC CONNECTORS . . Electric plugs and receptacles, some in Turn-Tyte design, also lamp sockets, cord sets, trouble lamps, heating elements, insulators. Catalog 53, 44 pages. Rodale Mfg. Co., Minor & 6th St., Emmaus, Pa.

Identify as IEN - 0442

MACHINE TOOL CONTROL . . Hydraulic duplicator attachment applied to a roll-turning lathe provides tracer-controlled machining. "Turn Rolls Faster" bulletin, 4 pages. Walker Hydraulic Duplicator Co., Box 400-A, Standish, Mich.

Identify as IEN - 0443

CHAIN CONVEYOR . . Circular flights ride a chain inside a tube to collect and transport solid and fibrous material which settles out from a tank, hopper or bin. How to plan a conveyor circuit, determine size, install and operate it are in 20-page Catalog 803 with case-history examples. Honan-Crane Corp., 510 Indianapolis Ave., Lebanon, Ind.

Identify as IEN - 0444

CUTTING TOOLS . . Twist drills, reamers, countersinks, milling cutters, end mills, taps and dies, arbors, gages. Distributor's Catalog 87-D, 84 pages, reproduces pages of a larger tool catalog in reduced size. Morse Twist Drill & Mfg. Co., 161-65 Pleasant St., New Bedford, Mass.

Identify as IEN - 0445

HYDRAULIC CYLINDERS . . Suggestions on size selection and installation in 32-page Bulletin 52-55 accompany data on standard units, mounting accessories and a flow nomograph. Vickers Inc., 1398 Oakman Blvd., Detroit 32, Mich.

Identify as IEN - 0446

DOCKBOARDS . . Magnesium, in a range of designs for rail and truck docks, including a trapezoidal unit for sharp-angle turns, illustrated in revised 4-page Bulletin DB-204R. Magline Inc., 7930 Mercer St., Pinconning, Mich.

Identify as IEN - 0447

DOORS . . Hollow steel units for building entrance and interior service. Illustrated designs, specifications, sectional drawing, presented in new 4-page bulletin, "Overline Door". Overly Mfg. Co., 1946 Overly St., Greensburg, Pa.

Identify as IEN - 0448

ELECTRONIC PART . . Point-contact transistor in switching applications is described by 8-page bulletin, "Switching Transistor", as to characteristics, parameters, ratings. Radio Receptor Co., 251 W. 19th, 5th Flr., New York 11, N. Y.

Identify as IEN - 0449

LIQUID FILTER . . For hydraulic oils, coolants and lubricants employs Monel metal wire cloth in multiple open loops. Advantages of the design, sump and line models, application data, are in 12-page Catalog 106. Marvel Engineering Co., 623-27 W. Jackson Blvd., Chicago 6, Ill.

Identify as IEN - 0450

FILTERING MATERIALS . . Diatomaceous silica is used as a filter aid for process liquids, as a filter medium, as a filler in paints and paper making, as thermal insulation. These and other uses are detailed in 28-page "Celite". Johns-Manville, 22 E. 40th St., Rm. 1201, New York 16, N. Y.

Identify as IEN - 0451

FLEXIBLE SHAFT MACHINES . . Grinding, sanding, drilling, wire brushing, buffing, polishing, filing are some of the operations performed by the ¼ to 3-hp. machines in 8-page Catalog 51. Shaft data, accessories, handpieces included. Stow Mfg. Co., 25 Shear St., Binghamton, N. Y.

Identify as IEN - 0452

FURNACES . . Electric, gas and induction-heated types for annealing, degasifying, heat treating, heating; also glass working, gas purifying, wire working, vacuum testing equipment and special parts. Catalog 85-53, 58 pages. Eisler Engineering Co., 748-52 S. 13th St., Newark 5, N. J.

Identify as IEN - 0453

GRINDING MACHINES . . Cylindrical, crankpin, cam and shape, toolroom, universal and surface grinding machines, also lapping and special-purpose machines. Catalog 1843-12, 24 pages. Norton Co., 36 New Bond St., Worcester, 6, Mass.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6873

Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS

Write for information

If you write maker identify as IEN - 6874

Look To The Leader For Lubricating Devices

GITS

40 Years' Leadership

Yes, for 40 years GITS has been setting the standard for industry... solving tough lubricating problems...earning the confidence of manufacturers . . . it's the reason people say, "Call GITS first".

Low Cost

Yes, GITS oil cups can do a complete lubricating job for you . . . prolonging bearing life, reducing maintenance costs, cutting down-time, boosting production . . . and GITS oil cups cost so little.

World's Largest Selection

Yes, only GITS can offer you such a wide range of standard stock sizes. From *just one* source you can get *all* lubrication devices in *any design* for *any purpose.*

Consistent Top Quality

Yes, GITS is known for uniform quality in design, materials and machining . . . this means constant, dependable performance for you. Inferior products can cost you time and money. Demand the best . . . get GITS.

Write Today for FREE CATALOG No. 60A Use it as your handy reference for lubricating devices

Oil Hole Covers, Oil Cups, Grease Cups, Bottle Oilers, Gauges, Gravity-Feed, Wick-Feed, Constant Level, Vibrating Rod Styles. Threaded or Drive-Type, Elbow or Straight.

GITS BROS. MFG. CO.

1854 S. Kilbourn Ave. Chicago 23, Ill.

If you write maker identify as IEN - 6876

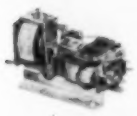
SOUNDLY ENGINEERED . . .

PRECISION-BUILT

Leach RELAYS . . .

not only meet, but surpass the most stringent requirements!

Always the goal at *Leach* has been to design and manufacture relays that achieve the maximum degree of performance.



Nearly four decades of leadership in providing a complete line of relays for a multitude of applications.

FOR BETTER CONTROLS THROUGH BETTER RELAYS
—*Specify Leach*

LEACH RELAY CO.

5915 AVALON BOULEVARD, LOS ANGELES 3, CALIFORNIA
Representatives in Principal Cities of U. S. and Canada

If you write maker identify as IEN - 6877

How thick is the coating?

Check with an ELCOMETER . . . new type thickness gauge for spot checks on non-magnetic coatings: porcelain enamel • paints • platings • foils • glass • paper • plastics • etc.

Accurate to ± 5% ± .0001".

For flat or curved surfaces in hard-to-get-at spots without loss of accuracy. Needle locking device assures a correct reading every time.

Comes with tough, leather case containing inner pocket for test strips.

Retail price ("A" Scale) $55.00 F. O. B. Cleveland, Ohio. Special scales available. Write for illustrated folder.

FERRO

FERRO CORPORATION
4157 E. 56TH STREET
CLEVELAND 5, OHIO

If you write maker identify as IEN - 6878

TWO GREAT FACTORY AIDS

HvH
Adjustable Limit
SNAP GAGES

HvH SNAP GAGES eliminate guesswork in checking. No skill required. Just set the snap gages and be assured of accuracy in manufacture and inspector's checking.

- Mechanite frames
- Strong, rigid, non-warping
- Model for every need
- Model A—0 to 6" Model C—0 to 5 11/16"
- In accordance with American Gage Design Standards
- Also special checking anvils made to your specifications

Write for Complete Information

HvH
New Easy to Use
CAM CLAMP

Imported CAM CLAMPS which give you greatest automatic clamping pressure with just a flip of the finger. In 6 seconds you can adjust from 0" to 8" opening. Light in weight and with no-mar sponge pads.

Discount on quantities of 12 or more.

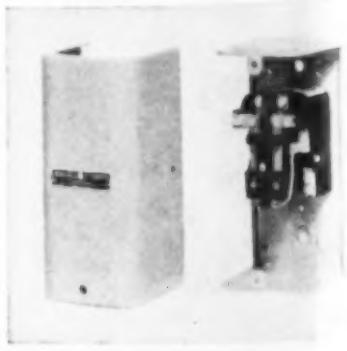
$2.50 each

HvH TOOL & INSTRUMENT CO.
150 Lafayette St., New York 13, N. Y.

If you write maker identify as IEN - 6879

RELAY . . General purpose unit, 6 to 300 volts, 10 amp. contact rating

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Bulletin GEC-257C

Type CR2790-E is a new small general purpose relay. It is suited for service as a starter for small ac. motors, that are protected against overload, and for use in electronic equipment, air conditioners, appliances. The contact arrangements include double-pole single-throw, double-pole, double-throw and single-throw double-break. Assembly includes a braided shunt and silver contacts. Operation is on 25, 50 or 60 cycles ac. or dc. Standard construction is front connected for mounting on either a metal or compound base. Studs can be supplied for back mounting and a special plug-in mount is available, as well as a special cast iron enclosure in which the relay rates dust tight on Class-1 Group-D explosion-proof service.

If you write maker identify as IEN - 6880

METAL TREATING . . Coloring process produces black finish on ferrous metal

Source: MITCHELL-BRADFORD CHEMICAL CO.
2444-48 Main St., Stratford, Conn.

Packaged in 100 and 400 lb. drums

Black Magic SS is a new formula for the company's blackening salt to surface treat ferrous metals. The new salt produces a lustrous black finish on stainless steel, cast and malleable iron, following immersion in the coloring solution for 5 to 15 minutes. The solution is made up by using 5 to 5½ lb. of the salt to each gallon of water. Temperature is raised to a little under 260 deg. F.

Work to be colored can be strung on wires, placed in baskets, hung on racks for initial immersion in a hot alkali cleaner for about 5 minutes. This is followed by a hot water rinse prior to immersing in the coloring solution. Following the immersion interval, the colored work is rinsed in clean water and then is immersed in an oil or wax finish.

If you write maker identify as IEN - 6881

HANDLING . . Portable steel table for machine or assembly department

Source: PUCEL ENTERPRISES INC.
3746-B Kelley Ave., Cleveland 14, Ohio

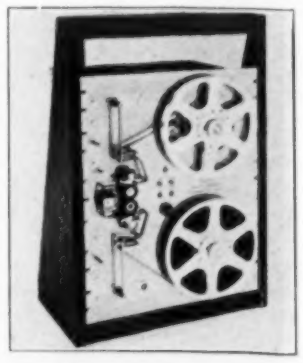
About $7 to $13

Load capacity on each of the shelves of this recently improved steel table is 250 pounds. Construction is in welded assembly employing formed steel shelves and angle iron legs. Casters can be specified. Dimensions are 13 by 23 inches. Height of the top shelf is 23 or 30 inches. The shelf flanges on one side face downward so tote boxes can be slid off.

If you write maker identify as IEN - 6882

COMMUNICATING . . Tape handler for fast data recording and playback

Source: POTTER INSTRUMENT CO.
113-17 Cutter Mill Road, Great Neck, N. Y.



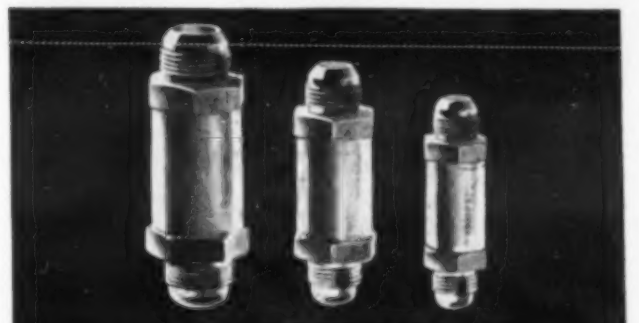
For business data

Model 901A for ½-in. magnetic tape, to provide 6-track recording, and **Model 901B** for ¼-in. tape to take two tracks, are new assemblies of magnetic tape handlers for fast data recording and playback. Additional models, for 1 to 11 tracks, are available for use with 2,400 ft. 10½-in. reels. The equipment is supplied plain or with the recording and playback amplifiers. Assembly is for a standard 19-in. relay rack mounting requiring 24½ in. of panel space with 13 in. behind the panel. Operation is on 110-volt single-phase ac. with input at 400 watts.

The equipment is characterized by its ability to start and stop intermittently, within 5 milliseconds, from external signals thus making it possible to record, playback, or compare blocks of information. The drive is at 15 and 30 ips.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6883



KOHLER
PRECISION CONTROLS

For check valves that are positive, specify Kohler. Series K-1207 hydraulic check valves in sizes from ¼" x 1" solve requirements for CHECK VALVES THAT CHECK. These valves, or their modifications, are used in hydraulic actuating lines for airplane landing gear, for machine tools, and for forked lift trucks. Precision lapped, their positive checking action prevents leakage and insures long service life.

Kohler Co., Kohler, Wisconsin. Established 1873

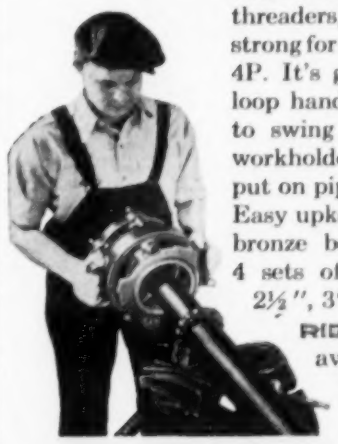
KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION CONTROLS

If you write maker identify as IEN - 6884

Never before one so easy to carry — easy to put on pipe...

RIDGID
4P Geared Pipe Threader



• If you've rassled with old-style geared threaders, you'll go strong for this RIDGID 4P. It's got balanced loop handles — a cinch to carry and to swing onto pipe. Mistake-proof workholder sets to size before it's put on pipe — only 1 screw to tighten. Easy upkeep — drive pinion in oilless bronze bearing; safe enclosed gear. 4 sets of 5 high-speed steel dies, 2½", 3", 3½", 4"; ratchet handle. RIDGID Universal Drive Shaft available — also 4P for conduit. Buy worksaver 4P at your Supply House.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO

RIDGID
Work-Saver Pipe Tools

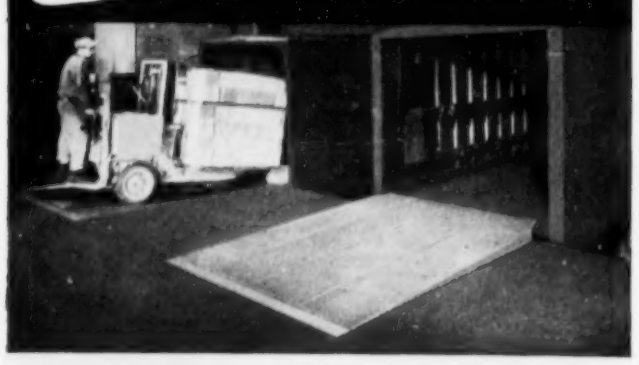
If you write maker identify as IEN - 6886

MERRILL MATERIALS HANDLING DEVICES

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

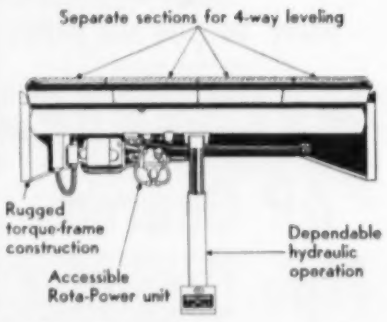
If you write maker identify as IEN - 6887

ROTARY'S NEW Leva-Dock



Adjustable hydraulic ramp for loading docks

- Low cost
- Simple installation
- Easy maintenance
- Assured Safety
- 4-way leveling



■ **Faster, Safer Loading**—Hundreds of material handling men were interviewed, thousands of loading docks checked before the new LEVA-DOCK was designed and engineered. It's Rotary's practical, economical answer to the loading dock problem.

This new automatic ramp compensates 4 ways for varying truck bed heights, out-of-level trucks, and truck spring deflection. Power trucks move quickly, safely in and out of trucks or trailers. A new automatic safety device prevents accidents and costly delays.

The Leva-Dock is a rugged, self-contained unit with oil reservoir mounted in torque-tube frame. All piping and wiring done at the factory except power leads and control wires. Installation costs are cut to the bone.

Mail the coupon and we'll show you how to make big savings at your loading dock.

Rotary Leva-Dock

MAIL FOR COMPLETE DATA
Rotary Lift Co.
1071 Kentucky, Memphis 2, Tenn.
Send information on the LEVA-DOCK to:
Name
Address

NEW LITERATURE—Concluded

Identify as IEN - 0454

BENDING MACHINE . . How to select a press brake, diagrams of press-brake dies as suggestions on how to make metal parts, application pictures as additional suggestions on forming, punching, notching, corrugating, and straight press work, all are in 76-page Catalog B-4. Cincinnati Shaper Co., Garrard & Hopple Sts., Cincinnati 25, Ohio

Identify as IEN - 0455

BLAST CLEANING . . Soft non-abrading pellets thrown from the Wheelabrator Deflasher remove flash from plastic parts in a hurry, minimize hand finishing, improve surface finish. Six-page Bulletin 934 shows before and after appearance, quotes production figures. American Wheelabrator & Equipment Corp., 1119 S. Byrkit St., Mishawaka, Ind.

Identify as IEN - 0456

BORING MACHINES . . Four standard models, single and double end, are shown with tooling to handle a variety of work in 16-page Bulletin 31205. Work-piece details and production figures are given, both small lot and production. Ex-Cell-O Corp., 1202 Oakman Blvd., Detroit 32, Mich.

Identify as IEN - 0457

BRONZE . . Continuous-cast rod, tube, shapes are uniform in composition and properties, according to 12-page Asarco Bulletin, which presents test data to prove it. Shapes, sizes, weights and tolerances are included. American Smelting & Refining Co., 1158-62 State St., Barber, N. J.

Identify as IEN - 0458

BUILDINGS . . Industrial plant and office buildings based on multiple assembly of a standardized modular unit of 30 by 40 ft. for a range of 10,000 to 500,000 sq. ft. in floor area. Details in 12-page booklet, "Modular Method". Ferber Co., 14-18 Johnson Ave., Hackensack, N. J.

Identify as IEN - 0459

BURRING . . Steel and carbide ground cutters, rotary files and burring tools are shown full size in 12-page Catalog 57 with a table of recommended speeds. R. G. Haskins Co., 2649-53 W. Harrison St., Chicago 12, Ill.

Identify as IEN - 0460

CALCULATING . . Ten-key electric machine to add, subtract, multiply, divide and print results on a tape. Eight-page Bulletin AC-639A-1 shows how to use it in figuring percentages, short-cut multiplication. Remington Rand Inc., 315 Fourth Ave., Room 1618, New York 10, N. Y.

Identify as IEN - 0461

CAN MAKING . . Machines to slit sheet metal for cans and containers, to square sheets, make can bodies, form double seams, test and reject leaky cans, blank and form can ends, seam tops to bodies. Catalog 36-A, 32 pages. E. W. Bliss Co., 1373-77 Raff Rd. S. W., Canton 10, Ohio

Identify as IEN - 0462

CASTINGS . . In steel, cast iron or semi-steel for machine-tool frames, gears, crankshafts, large press tools. List of alloys in 12-page bulletin includes five irons and a steel that can be flame hardened. Detroit Gray Iron Foundry Co., 280-84 Iron St., Detroit 7, Mich.

Identify as IEN - 0463

CHUCKS . . Independent, universal, combination, light-duty, two-jaw chucks; also face-plate boring-mill jaws; 50-page Catalog E-100 gives dimensions, list prices. E. Horton & Son Co., 28-32 Canal Bank, Windsor Locks, Conn.

Identify as IEN - 0464

CIRCUIT BREAKERS . . For circuits of 600 volts and under in ratings from 225 to 4,000 amp., air design. Bulletin GEA-5915, 12 pages, shows construction points including the stored-energy closing mechanism on some. General Electric Co., Dept. 6X-201, Schenectady 5, N. Y.

Identify as IEN - 0465

PRINTED CIRCUITS . . Five types for electronic use shown by schematic drawings with constants and by dimensional drawings in 4-page Bulletin 436, dated 1952 but newly released. Erie Resistor Corp., 642 W. 12th St., Erie, Pa.

Identify as IEN - 0466

CLAMPS . . Handscrews, bar clamps, C-clamps, clamp fixtures, press screws in a range of designs, some with quick-acting stops, also welder's clamps. Suggestions on selection and use in 32-page Catalog 18. Adjustable Clamp Co., 415-19 N. Ashland Ave., Chicago 22, Ill.

Identify as IEN - 0467

CLAMPS . . Standard and quick-acting units to hold work for machining, also standard fixture parts such as spherical washers, cams, hand knobs, quarter-turn screws. Catalog, 64 pages, gives full-scale traceable drawings. West Point Mfg. Co., 26933-37 W. 7-Mile Road, Detroit 19, Mich.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6889

BRAND NEW all-purpose CONE SEAL with TEFLON*

*DuPont Trade-mark for tetrafluoroethylene resin

"JOHN CRANE" TYPE 19 CONE SEAL WITH TEFLON

1. Temperature range: −100° to +450°F.
2. For all services, including water, oils, acids.
3. Pressures to 200 psi.
4. Has all the plus requirements of a good seal: positive drive, axial and radial movement, free sliding flexible spring action to compensate for wear of carbon washer, ease of application and replacement, long life, compactness.
5. Packaged seal, presently designed for small shafts ¼, ⅜, ½, ⅝, ¾" dia.
6. Tooled for the high production field. Has a wide field of application.
7. Can be manufactured at an economical price.
8. Manufactured in the "pressed-in" type where seal unit is held stationary.

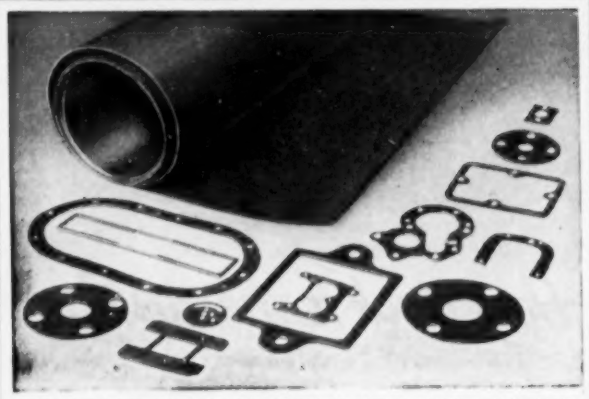
In the early stages of any seal application we might be helpful. For instance—the metallurgy of a seal is important; you may have space limitations; or you may have r.p.m. problems. These are only a few points. Drop us a line.

Crane Packing Company, 1815 Cuyler Avenue, Chicago 13, Illinois.

JOHN CRANE CRANE PACKING COMPANY

If you write maker identify as IEN - 6890

MELRATH GASKETS



GRAPHITED COMPRESSED ASBESTOS SHEET PACKING and GASKETS

MELRATH No. 125 . . . a high quality long fiber material resistant to acids, oils, steam, chemicals, etc. Proven for over 30 years.

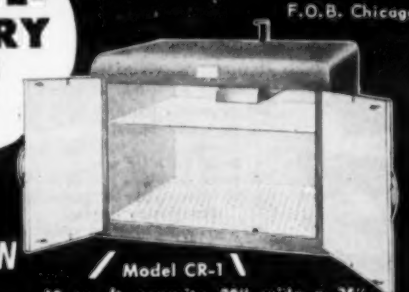
There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

If you write maker identify as IEN - 6891

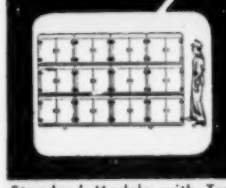
ELECTRIC OVEN • Only $79.50 F.O.B. Chicago

GRIEVE-HENDRY PORTABLE ELECTRIC OVEN



FOR PRODUCTION OR LABORATORY USE

Model CR-1
10 cu. ft. capacity—30" wide x 25" deep x 24" high. Removable shelves and drip pan.



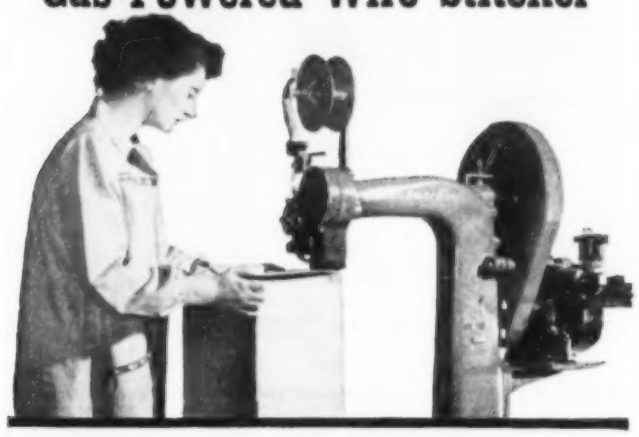
Portable. Adjustable temperature control to 225°F. Fan driven forced air circulation. Uniform temperature throughout. Plugs into any 110V wall outlet—no special wiring required. Can be used in a group or bank.

Standard Models with Temperature Ranges to 1000° F. Available.
Prompt Quotations on Ovens Built to Your Specifications.
Write for literature.

GRIEVE-HENDRY CO., INC.
1815 W. LAKE STREET Dept. IEN CHICAGO 12, ILL.

If you write maker identify as IEN - 6892

Acme Steel Announces New Gas-Powered Wire Stitcher



Shippers can now carry on stitching operations even where there are no electrical outlets available, with the new gasoline-powered Acme Steel Wire Stitcher. Powered by a built-in, compact, 1-hp., 4-cycle engine, it's as easy to run as a power lawn-mower. Costs little more than standard models, and opens up a whole new field of economical, mobile wire stitching operations.

For details, ask your Acme Steel representative or write to Acme Steel Products Division, Dept. IEN-63, Acme Steel Company, 2840 Archer Ave., Chicago 8, Ill.

ACME STEEL

STITCH IT...STRAP IT...SHIP IT...SAFELY!

If you write maker identify as IEN - 6893

WITH THESE **NEW**

Westinghouse Cylinders

YOU GET

Smaller size

Fewer parts

Adjustable cushioning

THE complete line of Westinghouse pneumatic cylinders has been redesigned. They have been streamlined and made real compact. Outside dimensions are only slightly larger than the air column inside the cylinder, and weight has been reduced.

Maintenance is low. There are fewer parts to wear, and *all* parts are made good and strong to assure long life in hard service. A wrench grip on the push rod makes servicing easy and adds to the life of the rod.

You can get these cylinders with or without adjustable cushioning in either or both ends for the 3" and larger diameters. Cushioning is adjusted with a screw-type needle valve.

For applications where corrosion is a problem, cylinders are available with stainless steel push rods and brass bodies. The units can be foot-mounted, flange-mounted, or pivot-mounted. Diameters range from 1½" to 10".

Write for complete information.

Westinghouse Air Brake COMPANY

INDUSTRIAL PRODUCTS DIVISION WILMERDING, PENNA.

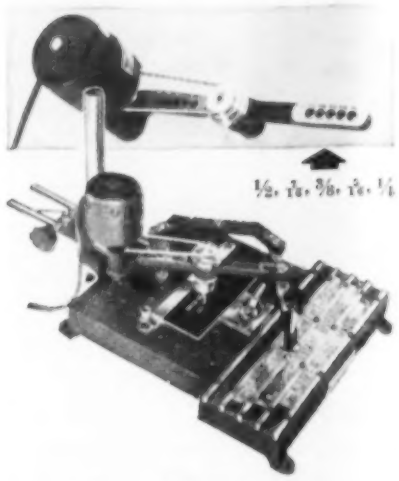
Factory Branch: Emeryville, Calif.

In Canada: Canadian Westinghouse Co., Ltd., Hamilton, Ontario

If you write maker identify as IEN - 6895

ENGRAVING . . Pantograph machine, adjustable to five ratios with master

Source: GREEN INSTRUMENT CO.
383-87 Putnam Ave., Cambridge 39, Mass.



For unskilled operators

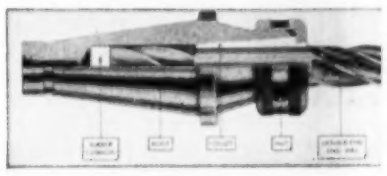
Any of five reduction ratios, between 1 to 2 and 1 to 4, can be set up on this recently improved Green engraver. They apply with various styles and sizes of master measuring 3/16 to 2 in. in height. The motor driven spindle operates at 1400 rpm. and is guided by a tracer in contact with the master setup. A holder will take four lines of copy measuring ½ in. in height or smaller.

Work to 10 in. in width and any length, can be mounted on the machine base. The width can be increased to 13 in. if only one line of copy is employed. The machine applies on work such as nameplates, panels, dials, scales, signs, tools, lenses. It will cut aluminum, brass, steel, plastic, wood, hard rubber, glass.

If you write maker identify as IEN - 6896

CHUCK . . Collet design, seven sizes for double end end-mills

Source: VICTOR MACHINERY EXCHANGE INC.
251 Centre St., First Floor, New York 13, N. Y.



Made in Sweden

The nut that threads onto the body of this new chuck engages a recess in the nose end of the collet. It presses the collet into position in the body, draws it out for size change. The base of the recess in the body carries a rubber cushion against which a tool can bottom. The chuck body is available in milling machine, Morse or B & S taper, or straight shank design. The smallest chuck is nominal ¼-in. size and takes collets from ⅛ to ½ inch. The largest 2-in. unit takes ⅞ to 2 inches.

If you write maker identify as IEN - 6897

WHEEL . . Welded pressed steel, semi-pneumatic or solid rubber tire

Source: GODDEYNE WHEEL PRODUCTS
1302 N. McLellan St., Bay City, Mich.

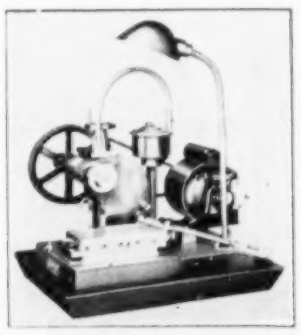
Simplified design

Four sizes are 6 to 12 in. in this new wheel. Its welded assembly supplements the company's line of bolted wheels. It provides a design for use where tire change or specific load requirement are not factors. The bearing can be specified in ball or Oilite sleeve design as desired.

If you write maker identify as IEN - 6898

MILLING . . Hand feed machine mounts on bench for utility use

Source: VIKING INDUSTRIES
218-22 Montague St., Rockford, Ill.



Coolant pan base

New design of the Type LMG-3 milling machine, previously described IEN-11614-51, includes a handwheel operated lead screw for vertical adjustment of the horizontal spindle and a coolant pump and motor to handle water soluble oil. The ball bearing spindle operates at speeds to 7,000 rpm. It is fitted with a 13/32-in. through hole and No. 7 B & S taper. Drive is by a belt connected ⅓-hp. motor.

The slide table measures 9 by 3½ inches. It is moved by a lever through 4 in. of longitudinal travel. Distance from table to spindle is maximum at 7 inches. Base dimensions are 11 by 18 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6899

NYLINED* BEARINGS

. . . with Smooth, Tough, Du Pont NYLON

Solve Many Bearing Problems

- Resiliency resists poundout
- Permit dry operation
- Minimize abrasion failures
- Silent operation
- Lower friction
- Superior corrosion resistance
- Damp mechanical vibration
- Eliminate friction oxidation
- Operate in liquids
- Close fits
- Non-contaminating
- Extremely compact
- Light weight
- Low cost
- Longer life
- Less maintenance
- Bearing surface instantly replaceable

*For further information and the name of your local representative, write

THOMSON INDUSTRIES, Inc.

Dept. 8
Manhasset, New York

Also Manufacturers of BALL BUSHINGS . . . the Ball Bearing for Linear Motions

If you write maker identify as IEN - 6900

Quick as a wink measure both AC and DC

WITH A COLUMBIA TONG TEST AMMETER

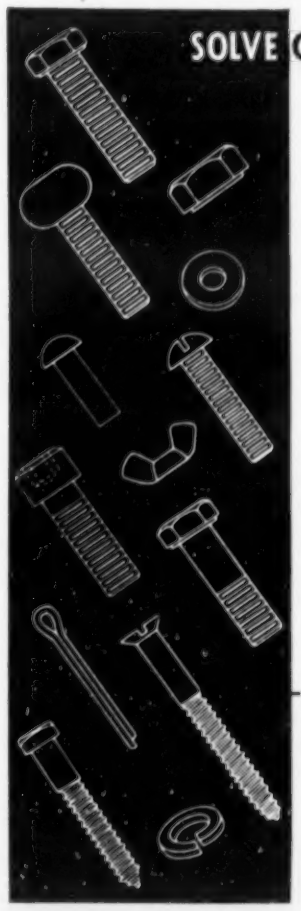
(Voltage attachment available)

- Both AC and DC ampere readings are made instantly and accurately without breaking circuit or scraping insulation
- Operated with one hand by merely clamping tongs around conductor
- Cannot burn out
- Scale ranges up to 1000 amperes AC or DC
- Voltage attachment reads up to 600 volts
- Five types to accommodate cables up to 3⅞", bus bars up to 4½"x½"

Write for Tong Test Bulletin IQ-400

COLUMBIA ELECTRIC MFG. CO.
4519 Hamilton Ave., Cleveland 14, Ohio

If you write maker identify as IEN - 6901



SOLVE CORROSION PROBLEMS!

Select HARPER *Everlasting Fastenings*

Harper can supply corrosion-resistant fastenings to meet every need. Call Harper for bolts, nuts, screws, washers, rivets and special fastenings of brass, silicon bronze, naval bronze, Monel, aluminum, all stainless steels. Over 7,000 different items ready for prompt delivery. See your Harper Branch or Distributor or write for catalog.

HARPER

EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog 25.

Name.....
Company.....
Address.....
City.....State.....

If you write maker identify as IEN - 6902

AGASTAT

Compact . . . Dust-Proof

TIME DELAY RELAYS

solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

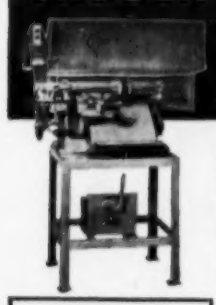
Write for Bulletin. Dept. A1- 62,

AGA

Division of Elastic Stop Nut Corporation of America
1027 Newark Avenue, Elizabeth 3, New Jersey

If you write maker identify as IEN - 6903

How to CUT AND STRIP INSULATED WIRE... as fast as 3,000 lengths per hour!



ARTOS Automatic MACHINES REDUCE TIME AND COST

For quantity production of finished wire leads . . . measured, cut to length, and stripped at one or both ends . . . investigate Artos Automatic Machines.

The Model CS-6 illustrated can complete up to 3,000 pieces per hour in 15-in. lengths, and other lengths in proportion. You save through combined operations . . . through quick, easy set-up . . . through unskilled help who can handle this machine. You obtain substantial time savings over the best manual or semi-automatic methods.

Highly accurate machine operation reduces work spoilage to an absolute minimum—errors due to the human element are eliminated. There is no cutting of strands or nicking of solid wire. Uniform lengths and uniform stripping are produced consistently.

MODEL CS-6E CAPACITY

FINISHED PIECES PER HOUR —15 in. lengths, 3000 per hour; 97 in. lengths, 500 per hour.
MAXIMUM STRIPPING LENGTH—1½ in. at each end.
MAXIMUM CUTTING LENGTH—97 in.
MINIMUM CUTTING LENGTH —2 in. (⅞ in. special).
WIRE HANDLED—Solid or stranded single conductor wires, parallel cord, heater cord, service cord, etc.
MAXIMUM WIRE SIZE—No. 10 stranded or No. 12 solid.

WRITE FOR BULLETIN

Get the complete story—write now for Bulletin 35-C on Artos Model CS-6 machines.

Automatic Wire Cutting and Stripping

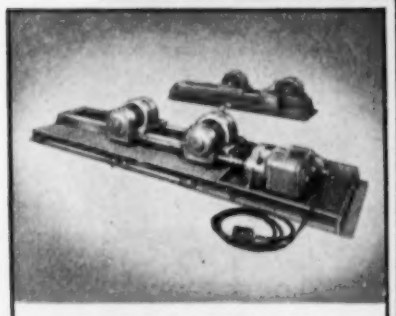
ARTOS ENGINEERING CO.

2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as IEN - 6904

REED ENGINEERING COMPANY

Modern Metalworking Equipment



BENDING ROLLS
TURNING ROLLS
AUTOMATIC WELDING FIXTURES

REED PORTABLE TURNING ROLLS

★ In 5 models; capacities up to 75 tons
★ For hand or automatic welding, finishing operations on tanks up to 14 ft. diam.
★ Reversible, variable speed adjustment
★ Rugged, all-steel construction
★ Built-in silent worm gear drive

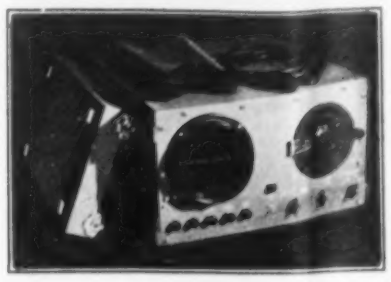
WE INVITE YOU . . . to write us for specifications, prices, list of REED users near you. No obligation. Just write on your letterhead.

REED ENGINEERING CO. 1009 W. FAIRVIEW CARTHAGE, MO.

If you write maker identify as IEN - 6905

TESTING . . Electronic instrument locates electric power line faults

Source: SIERRA ELECTRONIC CORP.
840 Brittan Ave., San Carlos 2, Calif.



List is $795

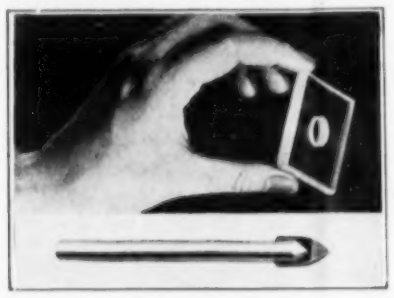
Shorts, grounds or open circuits are located instantly at any point in an electric power line, to 200 miles, from a power house, transformer bank or sub-station where this new Model 124 Line Fault Analyzer is located. Connection to the line is by means of carrier coupling capacitors. Tests can be made from phase-to-phase or phase-to-ground. Operation is on 110 volt ac.

The instrument sends a high amplitude pulse along the line under test. A picture of conditions is presented on a built-in radar type "A" scope. Calibrated linear sweep ranges of 5, 25, 50 and 100 miles are provided. A movable distance marker formed by a time-base step can be ranged out from 5 to 100 miles. When the step is placed in coincidence with the fault, the distance to it is read on the instrument dial.

If you write maker identify as IEN - 6906

GLASS DRILLING . . Carbide tool in seven sizes from ⅛ to ½ inch

Source: SUPER TOOL CO.
21652 Hoover Road, Detroit 13, Mich.



Note clean cut

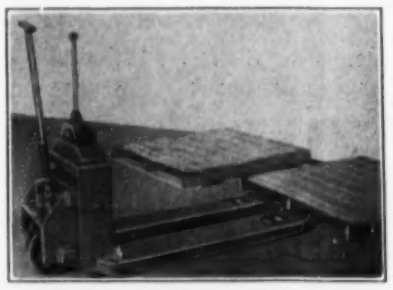
The company has developed a new point design for its carbide glass drilling tool, previously described IEN-7333-49. It cuts a clean true hole without tendency to crack or spall glass on either face. The design also provides for many regrinds without loss of original size.

Resharpening service is available from the company at moderate cost for users who are not equipped to grind their own carbide drills. The drill can be used in a portable or stationary tool, each application being subject to reasonable care in selection of speeds, pressure and wet or dry operation.

If you write maker identify as IEN - 6907

TRUCK . . Hand hydraulic lift for single and double faced pallets

Source: MARKET FORGE CO.
27 Garvey St., Everett 49, Mass.

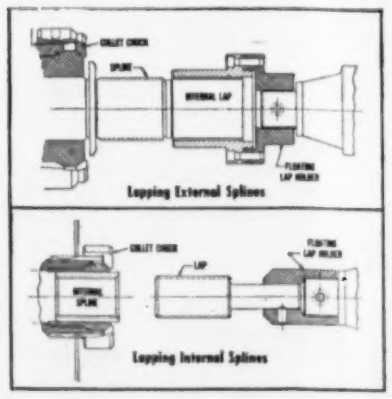


1½, 2½, 5 ton

The wheels in the two forks that enter a pallet to lift it measure 3¼ in. in diameter by 3¾ in. in face width in this new Model SD truck. Lift action is through 4 inches. The forks can be equipped with hinged adapters to lift and carry skid platforms with underclearance to a maximum of 12 inches. The forks are 9¼ in. in width. Opening for the center runner of a pallet is 8½ inches. The steering wheels at the forward end measure 10 in. in diameter by 3-in. face. They and the fork wheels are mounted on sealed ball bearings. Overall width is 27 inches.

Identify as IEN - 6908

New tooling can be applied on Michigan Tool Company's Model 996 or 998 internal gear lappers to lap small internal splines and non-rolling external splines and gear forms. External splines are finished with an internal toothed lap having the same number of teeth as the spline. The lap is mounted on a floating holder on the machine's reciprocating spindle. The work drives the lap. The lap spindle is braked hydraulically to provide the required action. A similar arrangement is used for internal splines.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6909

LAWLOR MOP WRINGERS

FOR EASIER MOPPING GET A LAWLOR NO. 2

EASIEST turning wringer made: there are bearings at ends of rollers.

EASY to bring rolls together: foot lever is perfectly balanced.

Copied but never duplicated!

EASY to move wringer; self-adjusting front casters raise metal feet from floor when you're ready to go. The LAWLOR No. 2 accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

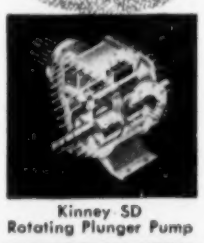
LAWLOR No. 6 TWIN is like the No. 2 Wringer in general construction, but accommodates two pails.

Write for Catalog of Mopping Tools, Wringers, Floor Scrub Wax-Polishing Machines for every kind and size floor.

S. C. LAWLOR CO.
120 North Aberdeen Street
Chicago 7 • Illinois

If you write maker identify as IEN - 6910

ROTARY Positive Displacement Pumps



Kinney SD Rotating Plunger Pump

Kinney Model HQ Heliquad Rotary Pump

When liquids must be handled at fixed rates of flow, it pays to install a Kinney Rotary Liquid Pump. These are furnished in two basic designs—the famous Model SD Rotating Plunger Pump and the unique Model HQ Heliquad Rotary Pump. Each design has specific advantages which make it the "pump of choice" for certain services. For instance, in barge and tanker service, the Kinney Model HQ Pump has the unusual ability of handling all viscosities from gasoline to heavy molasses. For handling viscous materials such as asphalt, grease, soap, etc., the Kinney Model SD is the outstanding favorite.

• • •

Tell us about your process pumping problems. Get full details on Kinney Rotary Positive Displacement Pumps—send for Bulletin L51. Kinney Manufacturing Co., 3564 Washington St., Boston 30, Mass. Representatives throughout the U. S. and in foreign countries.

Subsidiary of the New York Air Brake Co.
Kinney

If you write maker identify as IEN - 6911

MET-L-WOOD METAL BONDED TO PLYWOOD

Has Hundreds of Structural Uses in Modern Plants

To Name a Few:

- Walls and Partitions
- Doors
- Counters and Shelves
- Traffic Panels
- Truck Bodies (Patented "Ribless" Construction)
- Truck Body Panels
- X-Ray Rooms
- Moisture-Vapor-Proof Rooms and Containers
- Decorative Finishes

Met-L-Wood stock panels and prefabricated units are a challenge to modern industrial engineers and designers because of their multiple possibilities in economical, structurally-sound designs in hundreds of varied uses. Best start toward thinking in terms of Met-L-Wood design opportunities is to send for the Bulletin described below . . . Met-L-Wood Engineering Service is available without obligation on specific problems.

SEND FOR THIS BULLETIN ON MET-L-WOOD USES AND ADVANTAGES

Quick facts, with illustrations and diagrams on Met-L-Wood applications, types, possibilities. Sent without obligation on request.

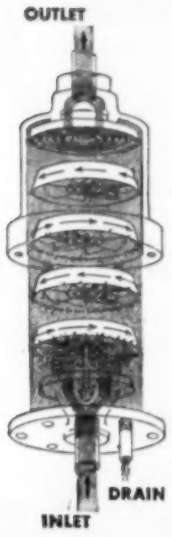
Met-L-Wood is metal bonded to plywood—permanently. Many metals, woods, thicknesses, shapes, finishes are available to meet YOUR requirements.

MET-L-WOOD CORPORATION
6755 West 65th Street • Chicago 38, Illinois
"Met-L-Wood . . . opening new horizons to structural designers"

If you write maker identify as IEN - 6912

EQUIPMENT LASTS LONGER ...PERFORMS BETTER... when the ARIDIFIER

SCRUBS, CLEANS AND DRIES On Air and Gas Lines



LASTS LONGER because...
The Aridifier's patented centrifugal-baffle action traps 92% of all dirt, oil, scale and water in gas or compressed air . . . and drains off these troublemakers *before* they can damage tools and equipment.

PERFORMS BETTER because...
The Aridifier protects tools against the freezing, fouling, caking and corrosion caused by dirt and foreign matter . . . assures the clean, dry air and gas that means better spray work, painting, lacquering, sand blasting, air cleaning, and similar operations.

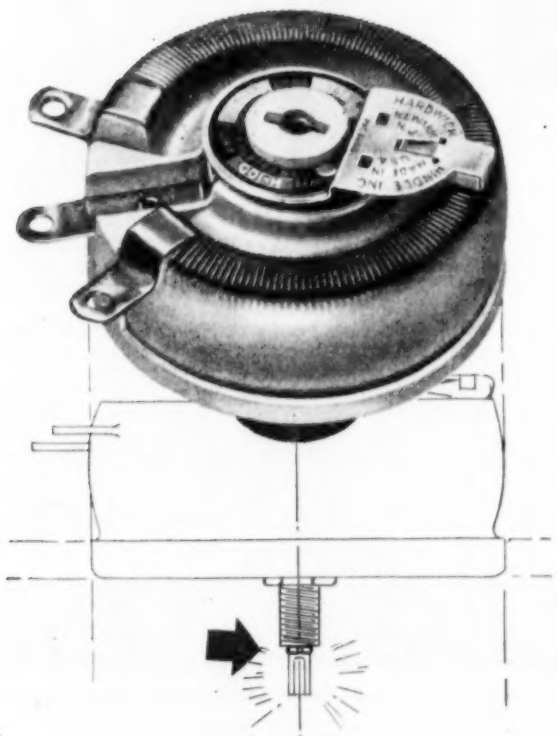
Easily installed, the Aridifier maintains itself. 10 models. Capacity range; 7 CFM to 17,000 CFM.

Learn HOW the Aridifier scrubs with a patented centrifugal-baffle action.
Write for This Catalog Now!

Logan ENGINEERING CO.
4902 W. Lawrence Ave., Chicago 30, Ill.

If you write maker identify as IEN - 6913

Let a simple retaining ring save metal and money for you!



Retaining rings saved material and assembly time on this finely made rheostat. They continue to save money both for Hardwick Hindle—the manufacturer—and for its customers.

Looking at this application you may say it was obviously a "natural", but there are literally thousands of cases where retaining rings can save as much or more.

Examine *your* machines and products to see where the use of these inexpensive modern artificial shoulders can cut your costs too.

It is needlessly expensive and wasteful to hold a mechanism in place with unnecessarily big shoulders or collars, or to temporize with small cotter pins etc., etc.

Let us show you how these high grade steel rings can do a thoroughly efficient job, saving money for you as well as for your customers.

More and more applications of retaining rings are being made every day.

Write today for descriptive folder.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN, U. S. A.

If you write maker identify as IEN - 6915

HOIST . . Pneumatic chain design rates ½ ton, speed to 40 fpm.

Source: ARO EQUIPMENT CORP.
107-11 Madison St., Bryan, Ohio

Light, fast, husky

The air motor in this new hoist is rotary vane design. It is operated by air pressure from a shop source. A throttle valve controls speed. The motor drives a sprocket carrying a roller chain with a swivel mounted hook at one end. The load can be lowered safely and with close control, by manipulating the throttle. Adjustable stops on the chain limit lift and descent. A brake locks, when the control is released, so the load will remain suspended if the connecting hose is accidentally disconnected or if the air is shut off.

Weight is 27½ lb. so one man can carry and install the hoist without difficulty. The operating mechanism, including the motor is enclosed against dirt, fumes or heat. A swivel connection on the hose prevents kinking. A built-in oil reservoir provides lubricant for continuous duty, in addition to the recommended line oiler and filter. Standard lift is 8 feet. Minimum hook-to-hook distance is 13¼ inches. Overall length is about 10 inches. Maximum diameter is 5 inches.

If you write maker identify as IEN - 6916

ELEVATOR . . Hydraulic table, caster mounted, foot pump operated

Source: RACK HYDRAULIC EQUIPMENT CORP.
6th St. & Leisenring Ave., Connellsville, Pa.

Two and three ton

Rectangular top on this new elevating table is made of a steel plate measuring 24 by 35 inches. The table can be rotated in its cylinder support. The casters are 6 in. roller bearing design. A floor lock completes the assembly. Lowered height is 28 inches. Maximum elevated height is 44 in. for the new table.

If you write maker identify as IEN - 6917

HOSE . . For air to 450 lb., oil, abrasion resistant, ⅜ to 2 in.

Source: QUAKER RUBBER CORP.
Comly & Tacony Sts., Philadelphia 24, Pa.

Will not "snake"

Qua-Flex is a new heavy duty compressed air hose made up of a non-porous tube of rubber to withstand oil and heat, a horizontally braided rayon cable cord reinforced carcass and a wrapped rubber cover to protect against abrasion and to resist weather checking and attack by oil. The hose is made in lengths to 50 feet. It remains flexible at temperatures to minus 40 deg. F.

If you write maker identify as IEN - 6918

TRUCK . . Magnesium hand unit weighs 18 pounds, rates 500 pounds

Source: MAGNESIUM CO. OF AMERICA
5220-24 Indianapolis Blvd., East Chicago, Ind.

Light weight, big load

New Magcoa hand truck is equipped with a frame measuring about 52 in. in overall height by 12 in. in width. The frame is made of magnesium and is mounted on ball bearing wheels equipped with pneumatic, hard rubber, or zero pressure tires. Bolted construction permits quick replacement of parts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6919

SPEED LOAD HANDLING for Truck, Shop or Machine

UNIT *utility* HOIST

Hydraulically operated Unit Utility Hoists can speed and ease handling of 1000 to 2000 lb. loads around your trucks, shop or machines, and the hoist itself can be switched from the truck, floor or machine mount in seconds. Three lifting points and boom extension give a wide working range. Hoist swings 360° on truck and locks securely in traveling position. Many uses in every plant.

Write today for latest information

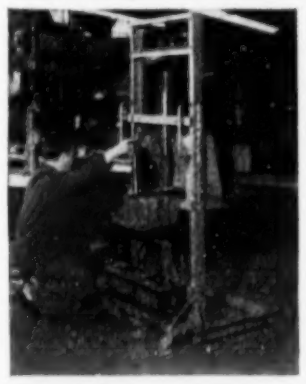
UNIT MFG CO. 1221 Harmon Place, Minneapolis 3, Minnesota

If you write maker identify as IEN - 6920

inexpensive MECHANICAL MUSCLES for your Light Duty Lifting

SERVICE *Battery Powered* JUNIOR LIFTERS

For loads too heavy for a man, too light for expensive, heavy-duty lifting equipment.



Service Battery-Powered JUNIOR LIFTERS easily, quickly and safely handle those light-duty lifting jobs—avoiding tie-up of your expensive, heavy lifting equipment. Ideal for receiving, shipping, storage and intra-plant materials handling.

Rate of lift 15 feet per min. Standard dimensions*: lift 4'8"; platform size 30" x 30" square; capacity 500 lbs.; overall height 6'0". *Write today for circular No. 430.*

*Other dimensions supplied on special order. Electric-Hydraulic Powered. Hand-Hydraulic and Crank-up, Crank-down Junior Lifters also available.

Battery Powered JUNIOR LIFTER is fast operating . . . can be used anywhere. Note how easily one man controls operations.

SERVICE CASTER & TRUCK CORP.
Executive Offices: Albion, Michigan
Plants at Albion, Michigan & Somerville 43, Mass.

See your Classified Telephone Directory for Nearest Distributor

If you write maker identify as IEN - 6921

You get ALL these features when you buy PET DRILLS!

If you want the best, take an extra look at the PET Superduty Drill above! Here's a continuous-duty drill—built to *work* right and *handle* right.

And, the price is right, too! All features shown are *standard* in PET Superduty Drills—at a *standard drill price!* Complete line of 54 ¼", ⅜" and ½" models gives you wide selection—in pistol or saw-type grip. Use coupon below to get complete facts!

PORTABLE ELECTRIC TOOLS, INC., 320 W. 83rd St., Dept. IE-63, Chicago
In Canada: Portable Electric Tools, Ltd., 452 Birchmount Rd., Toronto

MAIL COUPON FOR FREE BULLETIN

Please send me free PET Superduty Catalog and name of nearest distributor.

Name _____ *Title* _____
Company _____
Address _____
City _____ *State* _____

If you write maker identify as IEN - 6922

WHAT DO YOU WANT IN AN
INDUSTRIAL FLOAT

Whether you need floats for high or low pressure service, high or low temperatures, corrosion resistance, extreme buoyancy, wear resistance, or for any other special characteristics, you can get it in a high quality stainless steel float from Chicago Float Works. All sizes, and shapes available with all standard spud connections.

If your float has to be made up as a special, you can get exactly what you specify from Chicago Float. Over 35 years' experience in the business of building high quality industrial floats is your assurance of the best. Check with Chicago Float today for all your float requirements.

- Standard Diameters 2 to 10".
- Pressures to 1000 lbs.
- Temperatures to 800° F.
- All Standard Spud Connections.
- Top quality Stainless Steels.
- Non-corized weld for superior strength, and corrosion resistance available where required.

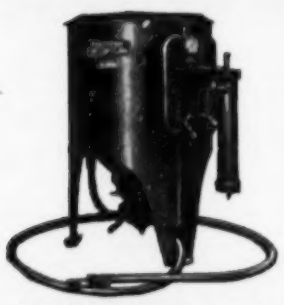
Send for complete bulletin on styles, sizes, shapes, spud connections and recommendations.

CHICAGO FLOAT WORKS
2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 6923

NOW! Pangborn Stock Units for Blast Cleaning . . . Dust Control . . . Precision Finishing

Blast Cleaning Unit is PORTABLE!

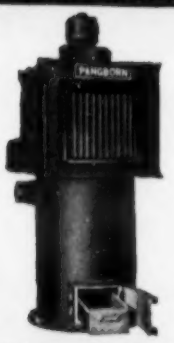


Ideal for maintenance and many other jobs, including removal of rust, dirt, scale, etc. Economically cleans large objects like tanks, bridges, structural work before painting. Six sizes, stationary or portable, from $187.00 and up.

Hydro-Finish SPEEDS POLISHING!

Removes scale and directional grinding lines . . . prepares surfaces for plating and holds tolerances to .0001"! Liquid blast reduces costly hand cleaning and finishing of molds, dies, tools etc. Models from $1410.00 and up.

STOP DUST at the SOURCE!



Pangborn industrial type Unit Dust Collectors trap dust at source. Machine wear is minimized, housekeeping and maintenance costs reduced. Solves many grinding and polishing nuisances and material losses. Models from $286.00 up.

COMPACT Blast Cabinet for SMALL WORK!

Ideal for producing clean, smooth surfaces on pieces up to 60" x 36" in size. Cleans metal parts, removes rust, scale, grime, dirt, paint, etc., in a few seconds. Saves money all year 'round. Models from $319.00 and up.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control Equipment

Pangborn MAIL COUPON FOR DETAILS

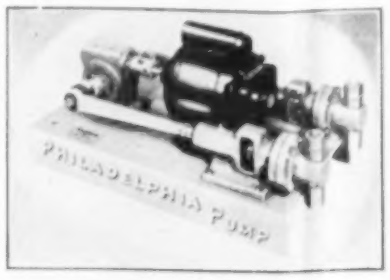
Check for more information
- Blast Cleaning Cabinets
- Blast Cleaning Machines
- Unit Dust Collectors
- Hydro-Finish Cabinets

PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.
Gentlemen: Please send me more information on the equipment I've checked at the left.
Name.....
Company.....
Address.....
City.....Zone....State.....

If you write maker identify as IEN - 6925

FEEDING . . Proportioning pump meters liquids into process lines

Source: PHILADELPHIA PUMP & MACHINERY CO.
353 Wynnewood Ave., Wynnewood, Pa.



Immediate delivery

Two pump heads are connected to a double-end Boston speed reducer that is driven by a centrally located motor in the assembly of this new proportioning pump. The connecting rods from the head to the reducer are adjustable for varying throw at the reducer end to adjust the amount of delivery at each head. Minimum capacity of the smallest pump is 5 cc. per hour. Maximum capacity of the largest pump is 128 gal. per hour. Pressure is to 20,000 pounds.

Adjustment can be specified for manual, pneumatic, hydraulic or electric control. The packing gland is open at both ends. A grease lantern ring can be changed to a water seal to handle suspended solids or corrosives.

If you write maker identify as IEN - 6926

INCINERATOR . . Consumes refuse, wet or dry, gas fired, safe to leave

Source: WINNEN INCINERATOR CO.
930-34 Broadway, Bedford, Ohio

Fill and forget

Wet or dry refuse, trash, garbage, is consumed in this new Model C-10 incinerator when the materials are dumped into an opening at the top of the housing. Twin burners for natural, manufactured or bottle gas, or oil, are built into the bottom grates to fire into the refractory lined combustion chamber. An auxiliary burner can be supplied near the top of the assembly to burn away smoke and odors before the products of combustion reach the top rear flue connection. The new unit is a small version, rating 10-bu. capacity, of the Model G-20, previously described IEN-8365-51.

If you write maker identify as IEN - 6927

DRYING . . Desiccant and holder remove moisture from fluid in a line

Source: ANSUL CHEMICAL CO.
Foot of Stanton, Marinette, Wis.

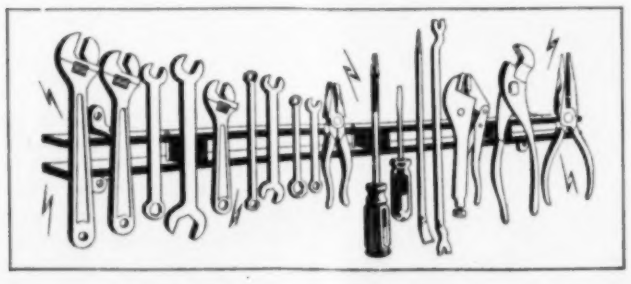
Applies in field

Water is picked up from refrigerants, transformer oils, gasoline, natural and manufactured gas, by application of the new desiccant, An-Drite, and its T-Flo holder. The latter is equipped with a connection fitting for application in a tube line and with a housing that disconnects from the fitting to fill and refill with the desiccant employed.

The drying material is a chemically treated gelatinous aluminum oxide hydrate in the form of ⅛-in. spheres. They do not powder and are efficient at temperatures to 140 deg. F. They also are non-corrosive and will remove acid from refrigerants. Four sizes hold 8 to 30 cubic inches. Seven connection fitting sizes range from ¼ to ⅝ inch.

Identify as IEN - 6928

Tool rack that holds ferrous tools by means of permanent Alnico magnets mounts on a wall. Two lengths are 24 and

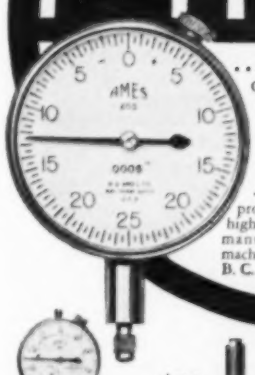


36 inches. Maker is Miami Magnet Company. Prices are about $9 and $13 for the two sizes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

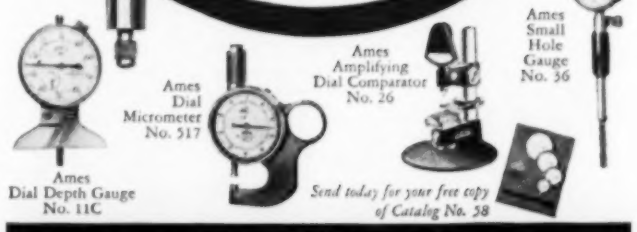
If you write maker identify as IEN - 6929

AMES



. . . the preferred Dial Indicators

One of America's largest and most famous mass-producers recently chose Ames as preferred source of supply for indicator gauges. They did because the four sizes of Ames "Hundred Series" indicators fit every measuring requirement; they are *accurate, sensitive,* low in friction, yet are *rugged* and *tough* — give *more* on-the-job time. All Ames products embody latest design and highest-quality materials; they are manufactured by methods and machines that are *exclusive* with B. C. Ames Co.



Ames Dial Depth Gauge No. 11C
Ames Dial Micrometer No. 517
Ames Amplifying Dial Comparator No. 26
Ames Small Hole Gauge No. 36

Send today for your free copy of Catalog No. 58

Representatives in principal cities. B. C. AMES CO. *33 Ames Street Waltham 54, Mass.*
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 6930

Now a Better Welder
AT A LOWER PRICE

Sureweld® A-C Shop Welder improved in many ways

The Sureweld A-C Shop Welder, for general utility welding, has always been outstanding for the remarkable arc stability it has provided, the desirable welding characteristics at all current levels and the operator's control of current value.

And now this welder has been greatly improved. The exclusive Sureweld 4-coil transformer has been positioned horizontally for even better ventilation and cool operation even with higher output. Primary insulation and secondary windings provide high dielectric strength for peak performance at high heats. Operator's convenience has been increased by side-mounting the control handle next to the high-visibility calibrated scale. Other advances markedly decrease KVA input and increase ease of operation, dependability and portability. Best of all, the improved design has resulted in lower prices.

Send for descriptive bulletin NH-101 today.

Copyright 1953, National Cylinder Gas Company

NCG® NATIONAL CYLINDER GAS COMPANY
840 N. Michigan Avenue, Chicago 11, Ill.

If you write maker identify as IEN - 6931

VALVES.
Unit-Tandem
1/2"-3/4"-1"
Spring return
Poppet Detents

COMMERCIAL HYDRAULIC
Fluid Power Controls
are REDUCING COSTS and INCREASING PRODUCTIVITY for the earth moving industry.

FOR COMPLETE DETAILS ASK FOR YOUR COPY OF CATALOG H-7

THE "COMMERCIAL" SHEARING AND STAMPING COMPANY
YOUNGSTOWN, OHIO
CHICAGO, ILL.
SALT LAKE CITY, UTAH

If you write maker identify as IEN - 6932

Model C67AD

POWERFUL Drives staples with far greater force, faster and with less effort than is possible with hand-operated machines.

FAST One-hand, trigger operation. Loads quickly with ¼", ⅜" or ½" staples.

3 MODELS Available with 3 types of clinching blade: "C" blade and "openhead" blade for sealing overlapped flaps of corrugated containers, and straight blade for ordinary stapling.

Write for Bulletin 272. BOSTITCH, 646 Mechanic Street, Westerly, R. I.

BOSTITCH®

fastens it better, AND FASTER with wire

If you write maker identify as IEN - 6933

NOONE

woven industrial fabrics

FOR ALL INDUSTRY

absorption • belting
filtration • pressing • refining
conveying • cushioning • insulation
lamination • polishing • roll covering
and many other specialized uses

•

EXPERIENCE

Our modern, efficient facilities, and 122 years of imaginative progress, have made Noone a leading manufacturer of woven fabrics designed for every conceivable industrial operation.

EXPERIMENTATION

Recent merging with Kenwood Mills makes available to Noone great new capacity for research. Experimental development of new applications for industrial fabrics is one of our major activities.

CONSULTATION

Write us your problem: it will command the attention of our experimental division until its solution is found. Your difficulty may well be solved with the use of a woven fabric engineered to your needs and specifications.

NOONE INDUSTRIAL FABRICS DIVISION —KENWOOD MILLS

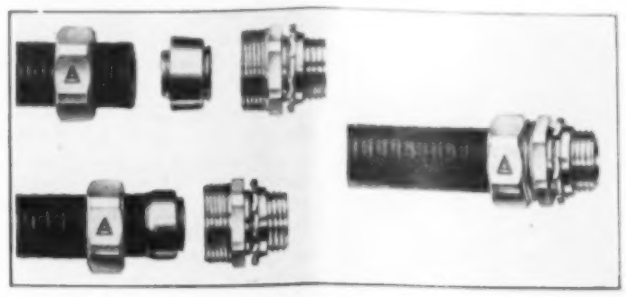
Dept. 610 • Peterborough, New Hampshire

The oldest manufacturer of woven industrial fabrics in America

If you write maker identify as IEN - 6935

CONDUIT . . Liquid tight fittings, ⅜ to 1¼ in., for flexible conduit

Source: APPLETON ELECTRIC CO.
1713 Wellington Ave., Chicago 13, Ill.



For equipment wiring

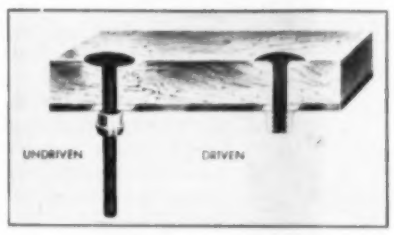
Series ST designates a new flexible conduit connector fitting, available in straight, 45 and 90-deg. designs, for five conduit sizes ranging from ⅜ to 1¼ inches. The connector provides a positive means to keep oil, water, acid fumes, chemicals, grease and dirt from the wiring it encloses. It also provides a positive ground for the flexible conduit.

Application starts with insertion of a sleeve into the conduit and application of a ferrule over the conduit after the tightening nut has been slipped into place. The threaded portion of the fitting is then placed over the ferrule and the nut is tightened. The action compresses the ferrule tightly on the conduit to hold its position firmly.

If you write maker identify as IEN - 6936

FASTENING . . Headed pin and collar to secure wood to metal

Source: HUCK MFG. CO.
2478-82 Bellevue Ave., Detroit 7, Mich.



Samples upon request

Lockbolt R-1018 is a new assembly of a serrated and headed steel pin and an aluminum collar with which wood and metal assemblies can be permanently fastened together. The pin is available in 3/16 and ¼-in. diameters. Assembly is by application of a pneumatic pull gun that presses against the aluminum collar and pulls on the pin until the collar is riding over a set of serrations on the head side of a necked section of the shank. At this point the tool compresses the collar so it bites into the serrations. Continuing pull breaks the projecting end of the pin, at the neck, to leave the finished fastening in permanent position.

If you write maker identify as IEN - 6937

VAPOR COLLECTOR . . For mercury, saves the mercury, neutralizes vapor

Source: ACME PROTECTION EQUIPMENT CO.
3035-39 W. Lake St., Chicago 12, Ill.

Please note our error

We stated, in error, that Mer Vac fluid is employed to neutralize the vapor in the company's new mercury vapor equipment in IEN-4326-53. Actually the Mer Vac material is a free flowing chemical crystal and not a liquid.

If you write maker identify as IEN - 6938

TESTING . . Multi-channel instrument records strain during a time interval

Source: GILMORE INDUSTRIES
5509-13 Euclid Ave., Cleveland 3, Ohio

No watching

Illustrated is Model 110 in a new line of three strain-time recorders. This model is designed for high temperature tensile testing. It records strain values of seven simultaneous tests on an 11-in. chart. The strain sensing element in each test channel is an electrical differential transducer with direct attachment to an extensometer rod. Full scale motion is obtained on the recorder for transmitter motion of 0.010 to 0.250 in. in five adjustable steps as required.

Models 108 and 109 employ standard contact types of strain indicators and provide six or twelve input channels that can be operated independently or simultaneously. Strain values are recorded on an 11-in. chart the same as in Model 110. Recording time for short time tests can be set at 12 or 4½ sec. per print. In the latter case a complete cycle is made in 30 sec. for a six-channel recorder and in 60 sec. for the twelve-channel assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6939

Faster, More Economical Finishing for Leathers

● Tanners use Cyclone Flex-Grid Conveyor Belts to carry flat leather hides through coating, spray painting and other finishing operations. By eliminating many expensive and time-consuming hand operations, production is speeded up, costs are cut.

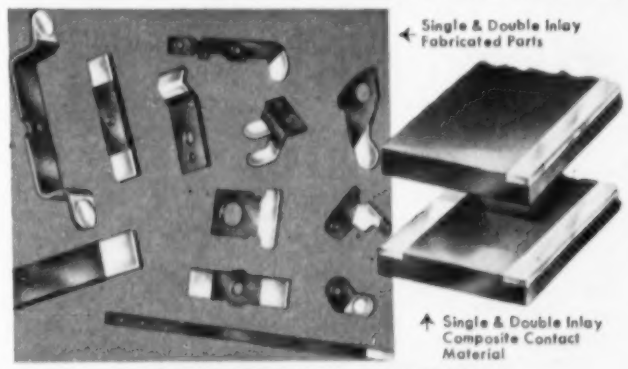
And the smooth metal of Cyclone Belts is easy to clean. For more information on Cyclone Conveyor Belts, get in touch with our experienced engineers or write Cyclone Fence, Dept. C-63, Waukegan, Illinois, for a free Conveyor Belt Catalog.

U·S·S CYCLONE
METAL CONVEYOR BELTS

CYCLONE FENCE DEPARTMENT
AMERICAN STEEL & WIRE DIVISION
UNITED STATES STEEL CORPORATION, WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

UNITED STATES STEEL

If you write maker identify as IEN - 6940



GENERAL PLATE

Composite Contacts Reduce Fabrication Costs . . . Provide Better Performance

General Plate Composite Contact Materials make it possible to manufacture complete contact assemblies to close tolerances by single blanking and forming operations as compared to other methods whereby the contacts and supporting members are fabricated separately and then assembled by brazing, welding or staking methods.

The junction between the precious metal and the base metal is homogeneous and free of voids resulting in a high rate of heat transfer. The rapid dissipation of heat away from the contact surface materially reduces electrical erosion. In many applications, General Plate Composite Contact Materials provide increased contact life even with a reduction in the thickness of the precious metal as compared to the thickness of the precious metal used in separate contacts.

By letting General Plate fabricate your complete contact assemblies, you will save money, time and trouble . . . needless equipment cost and problems of scrap disposal are eliminated . . . contacts and/or contact assemblies made to your exact specifications are shipped to you ready for installation.

If you fabricate your own parts, General Plate Composite Contact Materials will still save you money and allow you to make contact assemblies superior to those produced by other methods.

The long experience, diverse facilities and manufacturing skill of General Plate will benefit you in the form of service, quality and savings.

Write for complete information and Catalog PR700.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
76 Forest Street, Attleboro, Mass.

If you write maker identify as IEN - 6941

AMSCO V-MANG

The new moly-manganese electrode that's better than nickel-manganese rods for build-up and repair

• Tougher deposit • Higher yield strength
• Better weldability • Less cracking

For full engineering and metallurgical information on Amsco V-Mang, write for technical data sheet to Amsco, Chicago Heights, Illinois.

AMERICAN Brake Shoe COMPANY — **AMERICAN MANGANESE STEEL DIVISION**
415 EAST 14th STREET • CHICAGO HEIGHTS, ILL.

Other Plants: New Castle, Del., Denver, Oakland, Cal., Los Angeles, St. Louis. In Canada: Joliette Steel Division, Joliette, Que. Amsco Welding Products distributed in Canada by Canadian Liquid Air Co., Ltd.

If you write maker identify as IEN - 6942

Jenkins cast steel Valves

. . . for dependable economy in higher pressure — higher temperature services

Mounting pressure and temperatures in power generation and industrial processing call for Cast Steel Valves. Jenkins offers a wide selection of patterns that have met the test of industry's toughest services.

In these valves — through special refinements in design to increase service life and assure long, trouble-free performance — Jenkins provides a wide margin of strength and safety beyond ratings. Their efficiency and low maintenance records measure up to the high standards established for *all* valves developed by Jenkins Valve *specialists*.

Ask your distributor for the new Jenkins Cast Steel Valve Catalog or write: Jenkins Bros., 100 Park Ave., New York 17.

LOOK FOR THIS JENKINS DIAMOND MARK

JENKINS Jenkins Bros. SINCE 1864 VALVES

If you write maker identify as IEN - 6943

S'matter, Swami, won't it work?

Our near-sighted snake charmer friend should know he can get more out of a wire if it has a well soldered connection. Making the right kind of flux core solder for every application has been Kester's sole business for more than 50 years. For top quality solder, your best buy, today as always, is Kester Solder!

DO YOU HAVE *the free Kester Technical Manual, "SOLDER and Soldering Technique"? Better write for your copy today!*

KESTER

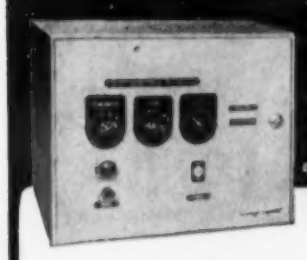
SOLDER COMPANY

4211 Wrightwood Ave. • Chicago 39, Ill.
Newark 5, N. J. • Brantford, Canada

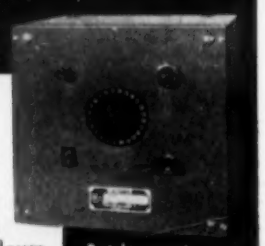
If you write maker identify as IEN - 6944

Count BATCHES Automatically

Amazingly easy to use
Completely dependable



Batch counts any quantity



Batch counts any of several numbers for which counter is built.

Monitor Automatic Batch Counters count predetermined quantities and automatically control packaging, diverting and batch marking devices without slowing down production or missing a single count.

Save labor—avoid production bottlenecks—eliminate element of human error—stop under-count complaints and over-count losses.

Successfully used for years in steel and paper mills, factories and breweries, can, carton, bottle cap, printing plants, etc.

Made in many types adaptable to a tremendous range of service requirements. Ask your PIC Representative or send for case histories and catalog.

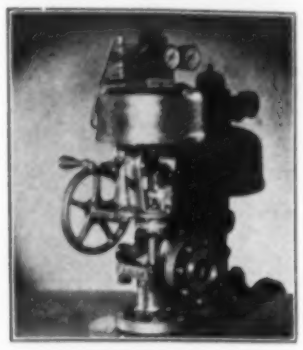
Counts batches of 100, 500, 1000, 5000, 10,000. Other types available—tell us what you want to accomplish or send for catalog.

PRODUCTION INSTRUMENT COMPANY
700-10 W. Jackson Blvd., Chicago 6, Ill.

If you write maker identify as IEN - 6945

VALVE . . Combination line unit for both pressure and manual operation

Source: ANNIN CO.
3502 Union Pacific Ave., Los Angeles 23, Calif.



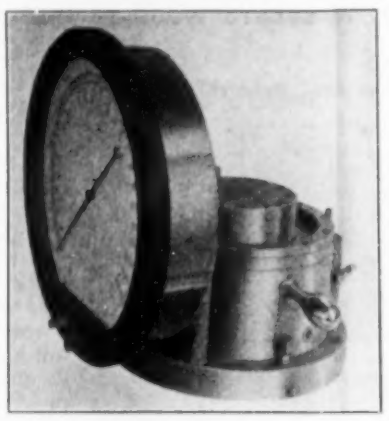
Model 1520SMW

New assembly of the combination pressure and manual control valve, previously described IEN-5272-51, mounts the manual control handwheel on the side as shown in the illustration. The valve is available for operating pressure to 5,000 lb. in normal design with temperature range between minus 100 and plus 450 deg. F. The manual control provides a means to adjust steam flow to a turbine or engine, fuel to an internal combustion engine. It also permits switching from one flow to another when batches are being processed intermittently. Power operation is by the company's Domotor piston and cylinder assembly in connection with a built-in null type positioner. Valve sizes range from ¾ to 6 inches.

If you write maker identify as IEN - 6946

WEIGHING . . Hydraulic scale and load cell, to 50 ton load rating

Source: A. H. EMERY CO.
Grove & Pine Sts., New Canaan, Conn.



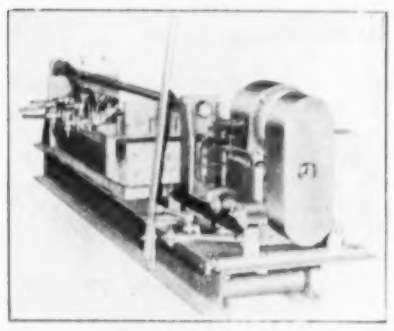
Reads pressure on cell

Accuracy is to 0.1 per cent of scale, in a range of stock sizes to 50 ton, in the company's new line of hydraulic weighing scales. The line includes 24 ranges for maximum readings from 500 to 100,000 pounds. Four load cell sizes are employed wth three scale diameters measuring 8½, 12 and 16 inches. The scale is mounted directly on the force measuring cell, previously described IEN-5767-49. Accuracy is guaranteed within 0.25 per cent of scale.

If you write maker identify as IEN - 6947

WOODWORKING . . Doweling machine drills and dowels wood railroad ties

Source: GRAHAM TIE DOWEL SERVICE CO.
1201-A Huntington Bank Bldg., Columbus 15, Ohio

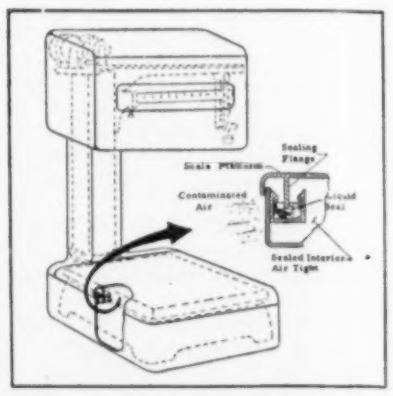


6,000 ties per month

Model DMMH is a new single end machine to condition ties that have split on their ends by driving dowels near the ends before the ties are treated. The machine employs a hydraulic holding and dowel pushing mechanism, driven by a motor at one end of a pair of I-beams forming the base. A motor driven drilling head is mounted on a track at the opposite end with a hand lever feed. The tie is placed in between. Two holes are drilled. Two dowels are then pressed into place and the tie is released from the hydraulic grip. The dowels measure ½ in. in diameter and to 12 in. in length.

Identify as IEN - 6948

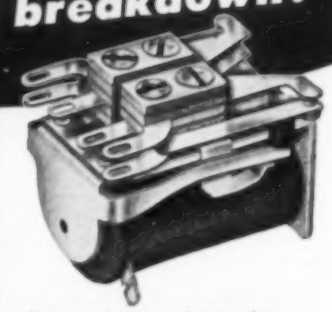
Air tight seal, employing a liquid channel and a flange, applies under the platforms of standard weighing scales. It sets up no friction or resistance to the platform movement. It keeps out dirt, foreign matter and prevents corrosion in the interior scale parts. It is the Cunningham Scale Seal, a product of Applied Engineering Company. The small inset drawing shows how the seal and flange protect the interior of the scale from dirt, dust and corrosives that may be airborne.



All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

If you write maker identify as IEN - 6949

115 million cycles without a breakdown!



Torture Test Proves COMAR RELAYS are Tough

Illustration shows a typical Comar Telephone Type "TM" Relay recently subjected to exhaustive tests by a Comar user. Results: 115 million cycles without a breakdown!

Comar relays stand up under severest operating conditions. They are engineered to far exceed normal performance and circuit requirements. Precision workmanship and top quality is your assurance of dependable operation. Comar specializes in relays custom-engineered to fit your needs. Send specifications for our recommendations, no obligation.

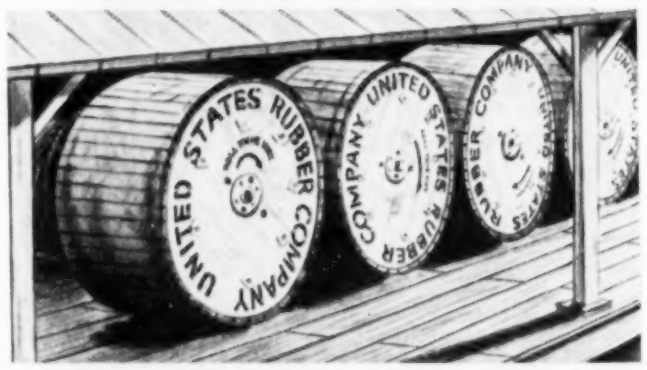
COMAR ELECTRIC COMPANY
3349 Addison St.
Chicago 18, Illinois

Write For Free Catalog

Relays • Transformers • Solenoids
Switches • Coils • Hermetic Sealing

If you write maker identify as IEN - 6950

How to prolong the life of wire and cable by proper storage



1 **Protect cables from the weather.** Moisture is especially injurious to fibrous coverings. When stored out-of-doors, if they become wet and then freeze, they will be weakened and the saturant will flake off. In humid weather, mold growth is accelerated, weakening the covering and making it easier to damage the cable during installation. (Rubber and thermoplastic insulated and jacketed cables may be stored under moderately humid conditions.) The larger sizes of fibrous covered and rubber jacketed cables and all lead-sheathed rubber insulated cables must be stored on reels which must be properly lagged—or the cable must be otherwise suitably protected against mechanical damage. Reels can be stored out-of-doors if the cable is protected against sun and weather, and the ends are properly sealed.

2 **Don't expose wires and cables to extremes of temperature.** Chemical reactions occur at a higher rate at high temperatures than low. The greatest deterioration of low-voltage cables is due to chemical changes, oxidation or internal changes in the compound itself. Never store reels in the boiler room unless you use a fan to blow hot air away from the wires and cables. It's best to store cables at room temperatures indoors out of direct sunlight. Rubber insulated cables may be stored and handled without damage at the lowest temperatures ordinarily encountered, but thermoplastic synthetic insulated cables should not be handled at temperatures below −10 C. (14 F.)

3 **Reels should be kept off the ground,** so that moisture will not harm the cables, reel flanges and lagging. Sound reels are easier to handle and there is less chance of injury to the cable as it is removed from the reel.

4 **Coils should be stored one layer deep on the floor or shelves,** with the axis either horizontal or vertical. To save space, they may be stacked, but not more than 5 coils in height—otherwise there is harmful pressure on the insulation. Don't remove brown paper or box that protects against dust and light until used.

5 **Rubber insulated fibrous covered, rubber jacketed or lead-sheathed cables in storage** should never be bent to a diameter less than I.P.C.E.A. recommended diameters. Never let coils or reels drop more than a few inches. Always roll a reel in the direction indicated by the arrow on the flange. When rolling an unlagged reel, put planks under the flanges to avoid pressure on the cable. Coils, reels and spools should always be rotated when wire and cable is removed to avoid twisting the cable.

FOR FREE REPRINTS, WRITE TO ADDRESS BELOW.

UNITED STATES RUBBER COMPANY

Electrical Wire and Cable Department

ROCKEFELLER CENTER • NEW YORK 20, NEW YORK

If you write maker identify as IEN - 6952

Good Looking and Serviceable

Eye Protection

AO'S New SPATULA TEMPLE

for F9200 Series Plastic Safety Glasses

Here, at last, is a temple a man can put on and take off without effort. The flat tip acts as a cushion behind the ears and is more comfortable than the skull type. Material is cellulose acetate butyrate (identical to the F9200 frame) and encloses a metal core. Standard temples are 4¼", 4½", 4¾" and 5" fitting values. These new temples (AO No. 178) will be particularly appealing to women workers because they will not disarrange the hair. Your nearest AO Safety Products Representative can supply you.

American Optical — Safety Products Division

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

If you write maker identify as IEN - 6953

Now operating one of the South's most modern and largest wiping cloth plants

INTRODUCTORY OFFER

#2 and #3 ALL WHITE FEED and FLOUR BAGS

MIN. SIZE 18 x 18 — MED. WEIGHT

18c per lb. F.O.B. Delivered

(Radius 250 Miles)

Washed and sterilized in our own laundry plant

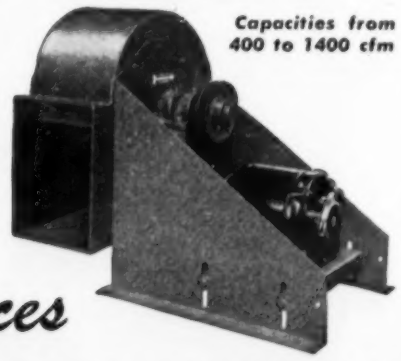
CROSS

Wiping Materials Corporation

4203 E. Pratt Street Baltimore 24, Md.

If you write maker identify as IEN - 6954

Capacities from 400 to 1400 cfm



nyb Announces

TWO NEW BELTED JUNIOR FANS No. 76 and No. 91

Developed to meet popular demand for a small, adjustable speed V-belt fan, which is quiet in operation and where fan speed can be adjusted in the field.

CAST ALUMINUM SLOW SPEED WHEEL is ideal to meet requirements of small ventilating problems where quiet operation is demanded and precise quantities of air are to be handled. In order to use the Slow Speed wheel for this service, belt driven units are necessary.

RUGGED CONSTRUCTION • Realizing that quiet fan operation requires sturdy construction, the same type all-welded steel housing is used as in the larger *nyb* ventilating fans.

Write for Bulletin 530

nyb THE NEW YORK BLOWER COMPANY

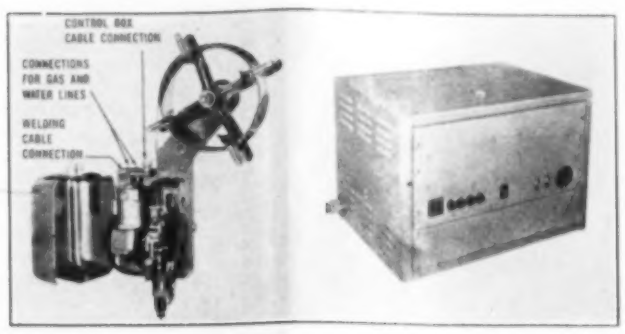
SALES OFFICES • 32nd STREET and SHIELDS AVENUE • CHICAGO 16

FACTORY, LAPORTE, INDIANA

If you write maker identify as IEN - 6955

WELDING . . Shielded arc machine and control to feed wire electrode

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.



Wire feeds from supply reel

Automatic operation follows adjustments made by the operator to preset the required voltage and operate a starting switch in this new Type SWM-3 shielded inert gas metal arc welding machine. An electronic control, assembled in a separate housing for remote location, maintains the proper balance of welding conditions by speeding up or slowing down the welding wire feed rate as required by the arc. The machine can be moved from one job to another by a single operator. It can be mounted on a wall, post or machine carriage.

A retract starter, built into the electronic control, feeds the welding wire downward to make initial contact with the work, retracts it to draw the arc, returns it toward the work to hold the preset arc voltage. Welding wire measuring 1/32 to 3/32 in. in diameter can be employed. The machine is suited for welding most commercial metals including aluminum alloy, stainless steel, carbon steel, deoxidized copper, Everdur aluminum bronze in thicknesses starting at 16 gage. Butt, lap, fillet and corner welds can be made.

If you write maker identify as IEN - 6956

HEATING . . Electric jacket for standard 30 and 55 gallon drums

Source: HAROLD L. PALMER CO.
2978-82 W. Davison Ave., Detroit 6, Mich.

Please note two ranges

We have new information to say that two thermostat ranges, not one, are available for the electrically heated drum jacket, previously described IEN-5481-53. The one we named in that previous description controlled temperatures to 250 deg. F. The second one, also available, goes to 450 deg. F.

If you write maker identify as IEN - 6957

PRESS TOOLS . . Punch and die unit for use singly or in multiple setups

Source: PRICE MACHINE PRODUCTS
927-31 W. 80th St., Dept. IEN, Los Angeles 44, Calif.

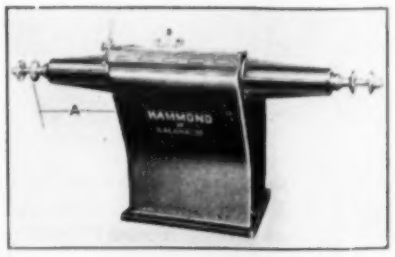
Self-aligning

New Sub Press is an assembly of spring backed punch holder, frame and die holder to mount on the bed of a press singly or in multiple to a template layout. The holders take interchangeable punches and dies of various sizes and shapes. Throat dimension, in four available sizes, ranges from 1 to 4 inches. Maximum distance between the upper guide bushing and the die holder mounting is 1½ to 3¾ inches. Overall height is 3⅜ to 5⅝ inches. List price is about $11 to $17 over the range of sizes.

If you write maker identify as IEN - 6958

POLISHING . . Motor driven machine clears 24 in. from housing to wheels

Source: HAMMOND MACHINERY BUILDERS INC.
1607 Douglas Ave., Kalamazoo, Mich.



Control centers at dial

Model 10-VROW is a companion machine to the Model-VRO, previously described IEN-4554-53. The new design increases clearance from 12½ to 24½ in. between the housing sides and the inner wheel flange. Overall spindle length has been increased from 69 to 93 inches. Width for the wheels between the flanges is maximum at 4 inches.

Drive is by a 10-hp. motor and variable transmission for speed between 1,500 and 3,000 rpm. at the spindle. It is mounted in four ball bearings. The motor, also ball bearing design, is available for standard electrical characteristics.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6959

S.S.WHITE "AIRBRASIVE" UNIT

uses a gas-propelled stream of abrasive particles to perform a variety of operations, including controlled removal of surface coatings, cutting, drilling, etching and finishing.

The cutting action is extremely cool and involves no vibration or pressure. Cuts can be held as fine as .018" in diameter.

The unit is ideal for precision work on electronic parts, glass, ceramics, metal and many other materials.

For complete information, write for Bulletin S212

THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO.
Dept. NA, 10 East 40th St.
NEW YORK 16, N. Y.

WESTERN DISTRICT OFFICE: Times Building, Long Beach, California

If you write maker identify as IEN - 6960

NEW MANCO HYDRAULIC RIVETER

Here's fast, silent, and powerful hydraulic riveting. Riveting cycle only one second. Easy-to-operate hand lever valve mounted on riveting head. No solenoids. Capacity for ¼" and 5/16" rivets. Adjustable pressure setting for use on straight and shoulder rivets. Riveting yoke reach is 1¾" with a gap of 1⅜" including rivet sets. Other yokes also available. Full swivel about cylinder axis permits easy placement. Compact electric hydraulic pump. Weight of riveting head . . . 18 lbs.

Model R-211-188E

Other Manco Riveters are available with capacities from 10 to 150 tons. Send us your riveting problem.

Dept. N-6

MANCO mfg. co.
Bradley, Illinois

If you write maker identify as IEN - 6961

INCREASE MACHINE EFFICIENCY . . .

Increase Belt and Bearing Life!

AMERICAN ECON-O-MATIC TENSION-CONTROL MOTOR BASES match belt tension with each variation of motor load *instantly* and *automatically*—eliminate belt-slip—reduce average belt tensions and bearing pressures by 50%!

Longer Belt Life
Longer Bearing Life
Lower Power Costs
Increased Output

* Easily installed and adjusted
* Mounts on floors, ceilings or walls
* Offers tremendous savings in operation of short center drives
* Adaptable to all types of electric motors.

For full information on American Econ-O-Matic Bases mail coupon *now* to:

The American Pulley Company
4240 Wissahickon Ave., Phila. 29, Pa.
Please rush complete information on Econ-O-Matic Motor Bases.
Name _____
Address _____
City _____ Zone _____ State _____

If you write maker identify as IEN - 6962

NEW ZENITH MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING

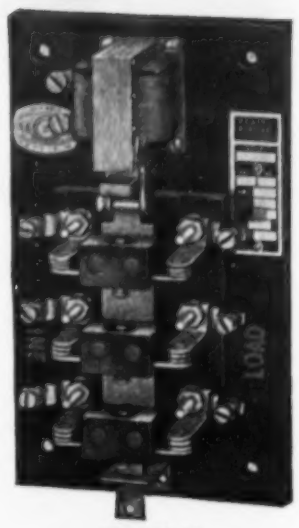
This ZENITH contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 — 25 amps. Size 2 — 50 amps.

Either size can be supplied in any number of poles.



TYPE SC 33

SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith! Write now for your Copy!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 6963

They'll give your painting production the GUN!

You can bank on Binks spray painting guns for smooth finishes and long life because they are backed by 50-plus years of experience. The Binks Model 18 is the finest gun made. It is the choice of leading automobile, furniture, aircraft and other manufacturers who require the finest of finishes.

In addition to the 18, Binks has a complete range of guns to fit any painting purpose or pocketbook.

Ask your jobber for recommendations or literature on Binks guns—or write to Binks Manufacturing Company, 3120-34 W. Carroll Ave., Chicago 12, Illinois.

Binks
EVERYTHING FOR SPRAY PAINTING
GUNS • SPRAY BOOTHS • MATERIAL TANKS • EXTRACTORS & ACCESSORIES
REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

If you write maker identify as IEN - 6964

whatever you need you'll cut costs using

BUSCHMAN CONVEYORS

A recent single order of BUSCHMAN Conveyors filled sixteen freight cars...almost fifteen miles of roller conveyor sections. The small business needing only a ten-foot section to span from loading dock to truck also looks to BUSCHMAN to supply its needs.

Whether your requirements are large or small, BUSCHMAN low-cost, rugged, light weight roller conveyors represent the easiest, most economical way to safely and quickly move packaged or self-contained products through any one or all phases of plant operations.

• Write For Bulletin No. 60

PRODUCE MORE FOR LESS — Buschman Conveyors

THE E. W. BUSCHMAN CO.
4479 Clifton Avenue • Cincinnati 32, Ohio
Representatives in principal cities

If you write maker identify as IEN - 6965

SIGNALING . . Television camera reproduces observed remote conditions

Source: ALLEN B. DU MONT LABORATORIES INC.
758-62 Bloomfield Ave., Clifton, N. J.

Applications unlimited

Tel-Eye is a new camera measuring 14 by 4⅝ by 9⅜ in. overall. It is actually a complete camera chain with associated power, synchronizing, RF, monitoring and output equipment, plus the camera itself. Its input line plugs into a standard wall socket. Its output connects to any standard VHF television receiver or to several receivers. It will produce excellent pictures with good normal room lighting. The receivers can be located at distances to 2,000 ft. from the camera.

The picture is steady and directly synchronized to the power line. Spectral response approximates the human eye. The camera can be used on any standard 16-mm. lens and is fitted to mount on a standard camera tripod. Weight is 18 pounds. Seventeen tubes are employed.

If you write maker identify as IEN - 6966

PAINTING . . Automatic machine sprays interior of cylindrical work

Source: CONFORMING MATRIX CORP.
330 Toledo Factories Bldg., Toledo 2, Ohio

Built to order

Revolving holders are mounted on an indexing table to bring two work pieces at a time into place under two extension spray heads in this new automatic machine. The head nozzles descend into the work and then retract upward, spraying as they rise. The machine is available with 4 to 24 work stations, each with air revolving drive at the spray stations. Operation is in connection with paint circulating or hot spray equipment which the company can supply to meet requirements.

If you write maker identify as IEN - 6967

CLEANING . . Portable vacuum machine for wet or dry use, ⅞ hp. motor

Source: CLARKE SANDING MACHINE CO.
28 E. Clay Ave., Muskegon, Mich.

Two-stage turbine

Model WD-15, to the right in the illustration, is a new portable vacuum machine particularly suited for use with the company's floor scrubbing machine, shown to the left. The new cleaner is driven by a ⅞-hp. universal motor. It mounts an 8½-gal. tank and provides a water lift of 61 inches. Interior and exterior of the tank are porcelain lined. A shut-off device warns the operator when the tank has been filled to capacity. Equipment includes a hose, wand, water pick-up squeegee tool and a felt shod tool. Other tools, for special operations, are available.

Identify as IEN - 6968

Stapling machine driven by a gasoline engine can be purchased from Inland Wire Products for use in locations, as in field produce packaging, where electric power is not readily available. The machine holds 25 lb. of staple wire, sufficient for extended periods of operation. It is available in several arm styles.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6969

ARO BLOW GUN

Metered air pressure!

●Throttle valve meters air exactly...just press for more pressure ...or set for *fixed pressure.*

●Extremely simple design.

●Easy to use—fits your hand.

●One piece cast housing—sturdy, rugged construction.

●For wide range of cleaning jobs in shops, foundries, production, inspection, shipping, etc. Write for details.

The Aro Equipment Corp., Bryan, Ohio
Offices in All Principal Cities
Aro Equipment of Canada, Ltd., Toronto, Ont.

ARO BLOW GUN
Also . . . Air Tools . . . Lubricating Equipment . . . Hydraulic Equipment . . . Aircraft Products . . . Grease Fittings

If you write maker identify as IEN - 6970

PORTABLE HOIST
WEIGHS LESS THAN 10 POUNDS WITH A 1½ TON CAPACITY

SPECIFICATIONS

- LITTLE MULE is equipped with 13 feet of 7/32" preformed aircraft cable with a guaranteed single strength of 5,600 pounds. This permits a pull or lift or 6 feet with double cable or 12 feet with single cable. No dangling chain. When cable is rolled on drum it is safely out of the way.
- Lever that controls raising and lowering mechanism is easy to reach, easy to operate. Can be shifted while wearing heavy gloves.
- LITTLE MULE is rated at 1½ tons but has an overload capacity of about 100%. The safety feature is in the 20" handle which is engineered to bend when the hoist is overloaded.
- There are no brakes to slip as the hoist has positive acting, double-interlocking pawls.
- All materials used in the construction of LITTLE MULE are corrosion proof or highly corrosion resistant.

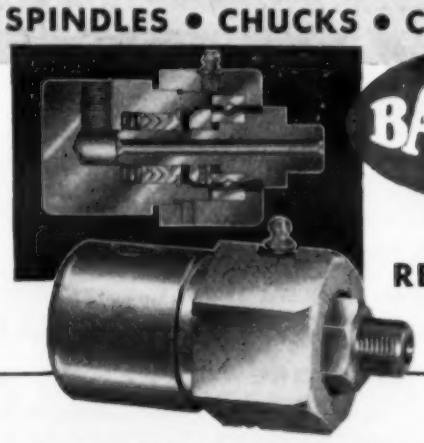
LITTLE MULE
IT LIFTS...PULLS...LOWERS

For complete information write . . .

LITTLE MULE CORP.
661 S. W. 2nd Avenue Ft. Lauderdale, Fla.

If you write maker identify as IEN - 6971

For High Speed Rotating Connections on
SPINDLES • CHUCKS • CLUTCHES



BARCO
TYPE V REVOLVING JOINTS

Use Barco TYPE V Revolving Joints wherever you need high speed, low torque, leakproof rotary connections for air or hydraulic lines on machine tools.

● LIGHT RUNNING! Ball bearing design handles both radial and light end thrust with low torque and minimum wear.

● LEAKPROOF! Thanks to Barco's exclusive "CTR" V-ring type seal.

● PRECISION-BUILT! All parts machined to close tolerances. Parts interchangeable and renewable.

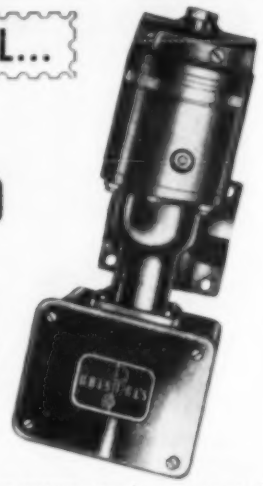
● COMPACT, DURABLE! Easy to install where space is limited. Withstands rugged service.

● WIDE SPEED RANGE! Up to 2500 RPM on light pressure applications. Lower speeds for high temperatures and pressures. Send for Catalog 300.

BARCO MANUFACTURING COMPANY
538G Hough Street • Barrington, Illinois

If you write maker identify as **IEN - 6972**

what's new at BRISTOL...



New Bristol Series 650 PNEUMATIC TRANSMITTERS

For use with BRISTOL MINIATURE RECORDERS, INDICATORS AND CONTROLLERS give you:

- **BRISTOL WORLD-FAMOUS MEASURING ELEMENTS**—the time-tested measuring elements with wide angle travel for positive action.
- **COMPLETELY RELIABLE AND TROUBLE-FREE TRANSMITTING UNITS**—sensitive to extremely small changes in the measured quantity.
- **SIMPLE TRANSMITTING MECHANISM**—frictionless with only one pivot, can be installed in any location—indoors or out.

Available in a wide selection of pressure, vacuum, temperature, liquid level, flow, and differential pressure ranges. Write today for free booklet, No. A105. The Bristol Company, 107 Bristol Road, Waterbury 20, Conn. 3.20

BRISTOL *THE DEPENDABLE GUIDEPOST OF INDUSTRY*

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as **IEN - 6973**

OK CENTERLESS BLADES

...standard equipment on practically every centerless grinder built because they L-A-S-T L-O-N-G-E-R

The phenomenal long life of Ohio Centerless Work Blades and Guides is due to their extreme hardness, high finish and close tolerances. Long blade life means high production resulting in lower costs.

Made of tungsten carbide, high speed steel, cast alloy or iron. Non-metallic tips available upon request.

In addition to standard blades, special contours, angles or shapes are made to your blue prints.

Manufacturers for the Metal Working Industry of

- Hardened Spacers
- Hardened Ways
- Gibs
- Ball Races
- Slitter Knives
- Shear Blades
- Rotary Shear Knives
- Bronze Ways
- Wear Strips

GO WITH OHIO GREEN

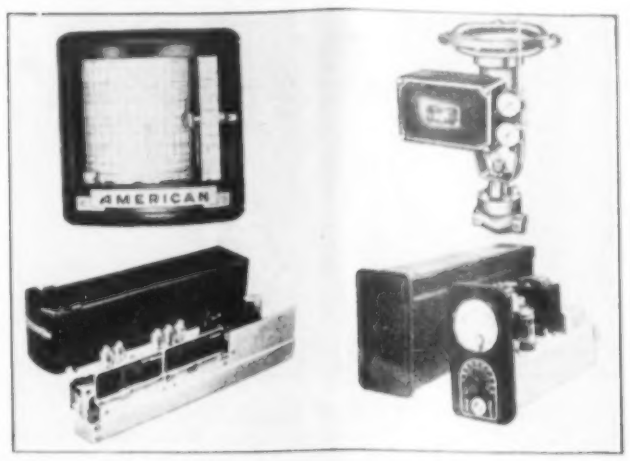
FREE! A comprehensive bulletin with complete specifications. Write Dept. J.

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

If you write maker identify as **IEN - 6975**

CONTROL . . Electronic equipment for lag free variable process action

Source: MANNING, MAXWELL & MOORE, INC.
248-52 E. Main St., Stratford, Conn.



Catalog 164 covers the line

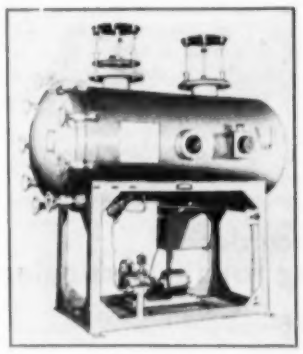
Recording controller, to the upper left in the illustration, a controller shown below it, an electro-pneumatic valve positioner and a manual positioner are four new instruments that have been added to the American line of process control equipment. The new units represent further development, that started with the Microsen balance, previously described IEN-668-48, for instantaneous transmission of pressure, temperature, liquid level flow.

Electronic transmitters, for use with the indicating, recording and control units, are made in various types, each for lag free action, precise sensitivity and stability. Dirt, corrosion, leakage or freeze-up are not factors. Components are standardized. Plug-in design simplifies servicing.

If you write maker identify as **IEN - 6976**

TESTING . . Explosion chamber checks equipment in gas atmosphere

Source: BOWSER TECHNICAL REFRIGERATION
752 Industrial Blvd., Terryville, Conn.



Explosion invited

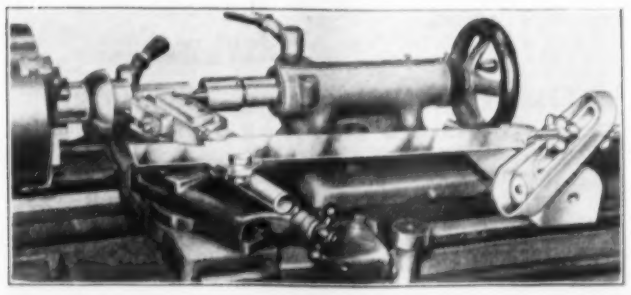
Equipment to be employed in aircraft, particularly types that might cause an explosion in a gas filled atmosphere, can be tested for safe operation in this new explosion chamber. It consists of a welded steel drum about 3 ft. in diameter and 5 ft. in length with a clamping door at one end. At the top are two check valves. At the side is a pad through which equipment connections are made. Beneath is a motor driven vacuum pump to simulate high altitude conditions.

A connection is provided through which gasoline can be introduced to produce the gas atmosphere. An explosion proof motor driven fan circulates the gas through the chamber. Means are included to explode the gas if the equipment under test does not do it. The check valves hold when the vacuum pump exhausts the interior. They open when the explosion occurs. The pump will simulate a 70,000-ft. altitude.

If you write maker identify as **IEN - 6977**

LATHE TOOLS . . Tracer attachment for contour work on an engine lathe

Source: LEHIGH FOUNDRIES INC.
1502 Lehigh Drive, Easton, Pa.



Particularly suited for short runs

Ball bearing slide head carries a single point cutting tool in this new Pro-Tracer attachment. The head is secured solidly by an anchor bolt to the compound tool rest on a lathe in place of the lathe's tool post. A finger, at the rear of the slide, contacts a template made of ⅛ by 2-in. steel strip. The template, in turn, is backed up by a slide head secured to the attachment head, stationary with reference to this head.

The template is anchored in an adjustable bracket back of the tailstock on the lathe bed. It can be cut to produce a required contour on the work as the carriage moves along the bed. Also, with the template secured at right angles to the bed, contour facing can be performed. The attachment is available in a Model EL-1100 for lathes swinging 9 to 13 inches. It takes a ⅜-in. square tool bit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 6978**

I'M FOREVER BLOWING TROUBLES!

I'm a Clements-Cadillac blower-suction cleaner. I keep your machinery clean . . . no troublesome Dirt, Dust and Grime gremlins will slow down your smooth operation with me around. I'm a cleaning tool that reaches every nook in all types of equipment.

SAVE TIME • MONEY PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 3 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as **IEN - 6979**

Simpson

multi-purpose MICROTESTERS STAY ACCURATE!

These instruments are 3"x5⅞"x2½"—weigh 1¼ to 1½ lbs.—shipping weight, 3 lbs. Prices shown are dealer's net. Except where otherwise indicated test leads with prods or test leads with alligator clips and insulated sleeves are $1.25 extra.

AC AMMETER	Model 370	Price $19.95
AC VOLTMETER	Model 371	Price $18.40
OHMMETER	Model 372 with Test Leads	Price $25.50
DC MILLIAMMETER	Model 373	Price $19.95
DC MICROAMMETER	Model 374	Price $23.00
DC AMMETER	Model 375	Price $19.95
AC VOLTMETER	Model 376	Price $19.95
DC VOLTMETER	Model 377	Price $19.95
AC MILLIAMMETER	Model 378	Price $22.60
BATTERY TESTER	Model 379 with Test Leads and Operator's Manual	Price $23.70

BURTON BROWNE ADVERTISING

Simpson ELECTRIC COMPANY
5200 W. Kinzie Street • Chicago 44, Illinois
Phone: COlumbus 1-1221
In Canada: Bach-Simpson, Ltd., London, Ont.
World's Largest Makers of Electronic Test Equipment

If you write maker identify as IEN - 6981

DAY DUST CONTROL

SINCE 1881

A SINGLE UNIT OR A COMPLETE SYSTEM

DAY's reverse air jet mechanism provides uniform cleaning.

INDUSTRIAL PLANTS FIND DAY HIGH PRESSURE

REVERSE AIR JET CLEANING ACTION

MORE ECONOMICAL! MORE EFFICIENT!

Reverse Air Jet Ring Travels Continuously Up and Down the Entire Filter Tube. High Pressure Reverse Air Blown Through the Filter Felt Keeps Filter Tubes Clean Constantly.

99.99+% Filtering Efficiency Provides Important Savings in Reclaiming Valuable Products

DAY's improved cleaning action permits the use of better filtering fabric which gives filtering efficiencies up to 99.99+%. One **DAY** "AC" Dust Filter can handle four different product streams simultaneously, without mixing. Bulletin 528 gives facts, figures and comparison charts. Be sure to see it. Write

The DAY Company

813-3rd Avenue N.E. • Minneapolis 13, Minnesota

IN CANADA: P. O. Box 70T, Ft. William, Ont.

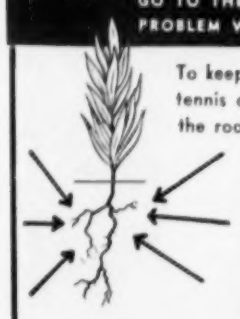
Branch Plants in Buffalo, Ft. Worth and Welland, Ontario

LICENSED BY H. J. HERSEY, JR.

If you write maker identify as IEN - 6982

GET THOSE WEED ROOTS!

GO TO THE ROOT OF YOUR WEED PROBLEM WITH THESE DOLGE PRODUCTS



To keep weeds off drives, walks, parking lots, tennis courts, sand traps you've got to finish the roots.

DOLGE SS WEED-KILLER does that—and more. It kills the foilage, of course. It works down deep. It tends to sterilize the soil so that wind-blown seeds cannot sprout in it. Diluted as directed, it can kill the toughest weeds. Spray or sprinkle where you want no growth whatsoever.

E.W.T. is the Dolge 2,4-D **Selective** Weed-Killer. It finishes dandelions, plantain and other broad-leaved weeds in turf—does not harm good lawn grasses. It translocates; is absorbed and travels through the sap to the roots.

See your Dolge Service Man—he will call soon.

Write for the Dolge booklet on chemical weed control.

FOR **FREE SANITARY SURVEY** OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

Dependable **DOLGE**

WESTPORT, CONNECTICUT

If you write maker identify as IEN - 6983

NEW and TIMELY!

Get This Information on How to Select Stainless Steels to . . .

- ✓ Conserve Critical Alloys
- ✓ Reduce Unit Costs
- ✓ Improve Performance

This new, 18-page bulletin, "Factors in Selecting Stainless Steels" gives facts and figures on . . .

- Possibilities of straight chrome grades as alternates for chrome nickel grades
- General types of stainless steels
- Physical and mechanical properties
- Relative workability tables
- Relative corrosion and heat resistance

CLIP AND MAIL COUPON NOW!

THE CARPENTER STEEL COMPANY

151 W. Bern St. • Reading, Pa.

At no obligation, send me a copy of your new "Factors in Selecting Stainless Steels".

NAME _____ TITLE _____
(Please Print)

COMPANY _____

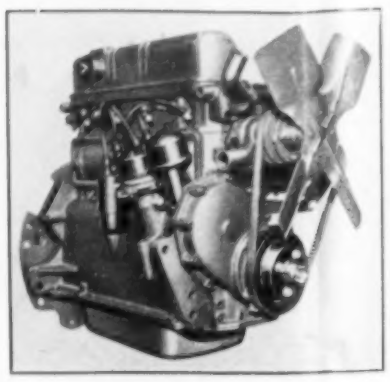
ADDRESS _____

CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN - 6984

ENGINE . . Water cooled, gasoline, for general industrial use, to 45 hp.

Source: FORD MOTOR CO.
15048-52 Woodward Ave., Highland Park 3, Mich.



Specifications on request

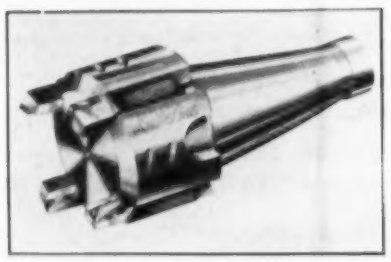
Ford "134" is a new 4-cylinder overhead valve engine with centrifugally cast dry cylinder liners, weather proofed ignition, engine mounted muffler, pressure lubrication and an oil filter through which all of the engine oil passes on each circuit through the bearings. Rating is 45 hp. at 2,400 rpm. Displacement is 134 cubic inches.

Rotators prolong valve and seat life. A built-in variable governor limits speeding. A thermostat controls water temperature in the cylinder head. The engine weighs about 490 lb. without the clutch housing. Overall height is about 27 inches.

If you write maker identify as IEN - 6985

MILLING . . Inserted bit cutter 3 to 6 in., 4 or 6 blade assembly

Source: WENDT-SONIS CO.
Collier & Tenth Sts., Hannibal, Mo.



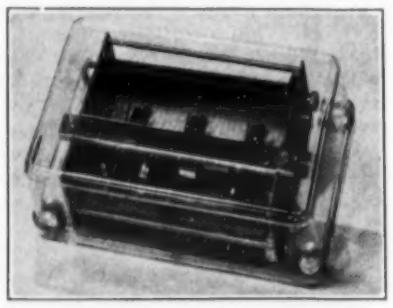
For smooth work finish

New sizes and blade assemblies have been added to the company's inserted bit fly cutter, previously described IEN-12690-46. The new units are equipped with milled and finish ground body slots and with blades ground on both locating sides. The blades are equipped with carbide tips and are held in place by pairs of clamping screws. The shank is a standard milling machine spindle design. It can be specified as to tapers and shapes to meet requirements.

If you write maker identify as IEN - 6986

TESTING . . Impact recorder for products during handling, shipping

Source: IMPACT-O-GRAPH CORP.
1902 Euclid Ave., Cleveland 15, Ohio



Checks rough handling

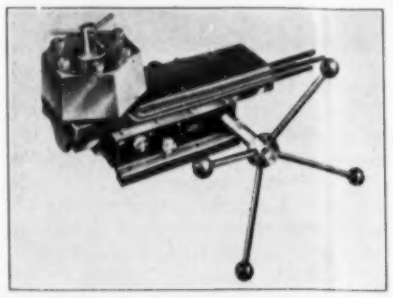
Model HXS is new miniature design of the company's Model HX impact recorder, previously described IEN-3659-52. It employs three stylii to record traces on a strip chart for longitudinal, lateral and vertical movements. It differs from previous motor-driven design in the ratchet arrangement move tape forward with each shock loading.

Weight is 22 ounces. The transparent plastic housing permits viewing the chart as a test progresses.

If you write maker identify as IEN - 6987

LATHE ATTACHMENT . . Bed turret for lathes swinging 10 to 12 inches

Source: A. K. TOOL CO.
2027-31 Blake Ave., Los Angeles 39, Calif.



Adjustable travel stops

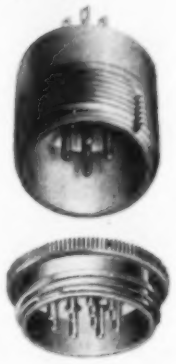
New turret clamps to a lathe bed to provide six tool positions and a working stroke of 7¼ inches. It will swing tools as large as 6 in. in diameter over the ram with its new Tilt-Head design. The self-indexing assembly has ground bearing surfaces on the slide and bed.

It employs a new type of tapered locating pin that engages a sleeve bearing and locates in a mating seat. The indexing can be manual or automatic. Both ram lock and head lock are provided for stability on heavy cuts when the lathe is so employed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6988

CANNON PLUGS *for hermetic sealing*



SUB-MINIATURE U Series plugs for miniature switches, relays, transformers, amplifiers and other sealed components have steel shells and Silcan insulation, cable relief and moisture resistant sleeve. Bayonet-lock coupling method. Rated 1700 v. D.C.; 5 a.—Have 3, 6, and 12 contacts—one plug style and two receptacles. Refer to U-2 Bulletin.

GS TYPES (Top, right) and **RKH** Types (Bottom, right) have fused vitreous insulation providing a true hermetic seal for relays, position indicators, etc. Cadmium finish steel and bleached Iridite shells with Dural coupling nut. Resist thermal shock—300°F. to 600°F.; pressures 200 to 900 psi—specials to 7500 psi. See GS-3 section in AN-8 Bulletin and KH-1 section in K Bulletin.

CANNON ELECTRIC

Since 1915

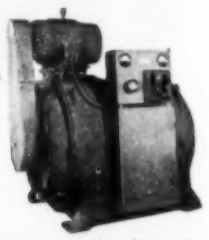
FACTORIES IN LOS ANGELES, TORONTO, NEW HAVEN

Representatives in principal cities. Address inquiries to Cannon Electric Co., Dept. F-112, Los Angeles 31, California.

If you write maker identify as IEN - 6989

...FOR A JOB WELL DONE!

KATO ENGINEERED ELECTRICAL EQUIPMENT



KATO ENGINEERING has been building Special Electrical Equipment and machinery since 1928. Our modern, well equipped plant produces the finest in generators and electrical machinery from the smallest to the largest.

We Invite Your Inquires on Special Requirements!

A. C. GENERATORS
Sizes from 100 watts to 300 K.W., in one or two bearings. Speeds of 720-3600 R.P.M., 60 cycles. Also 15-800 cycles, single and three-phase.

D. C. GENERATORS
Sizes ranging to 15 K.W.

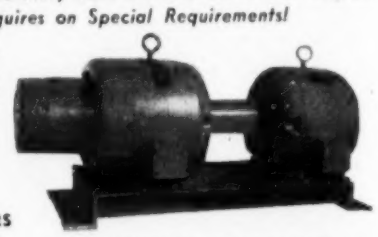
ROTARY CONVERTERS
For Changing D.C. to A.C.

HIGH FREQUENCY CHANGERS

D. C. MOTORS UP TO 10 H. P.

D. C. MOTORS WITH A. C. TAKE-OFF

A. C. MOTORS, SINGLE PHASE
1, 1½, 3 H.P.



MOTOR-GENERATOR SETS
D. C. to A. C., A. C. to D. C. 25 cyles to 60 cycles, 60 to 400 cycles.

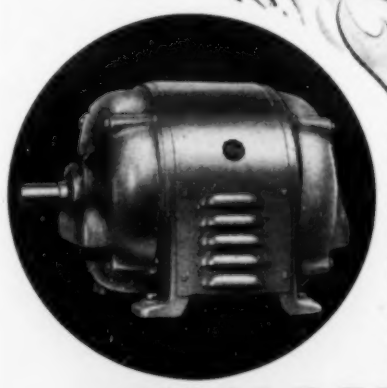
KATO *Engineering Company*

WRITE TODAY FOR INFORMATION!

1478 FIRST AVENUE MANKATO, MINNESOTA

If you write maker identify as IEN - 6990

ASBESTOS-PROTECTED!



ASBESTOS CANNOT CARBONIZE!

No motor is more durable than its windings. In U. S. Uniclosed Motors all windings are *asbestos-protected*. Motor life is tremendously increased because asbestos cannot carbonize and withstands highest temperatures.

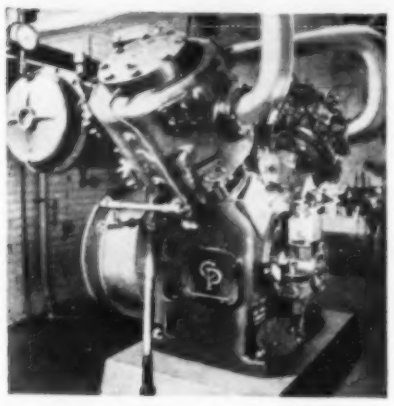
UNICLOSED

Attractiveness of armored Uniclosed design adds eye appeal. ¼ to 250 h.p Write for interesting descriptive Bulletin featuring Uniclosed Motors

U.S. ELECTRICAL MOTORS Inc.
Los Angeles 54, Cal. Milford, Conn.

US MOTORS

If you write maker identify as IEN - 6991



THERE'S SPACE TO SPARE...

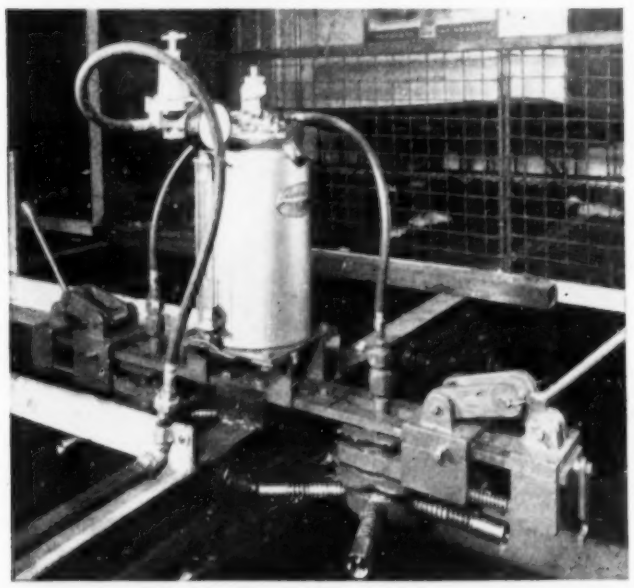
CP's heavy-duty Type Y Compressor takes up minimum floor area, but is designed for continuous heavy service. Has roller main bearings, precision connecting rod bearings, multi-step capacity regulation, and an easy-to-clean shell-and-tube intercooler.

Available in sizes from 75 hp to 250 hp, 410 cfm to 1663 cfm, and with flange mounted, belted and coupled motors. Write for Bulletin 766. *Chicago Pneumatic Tool Company, 8 East 44th Street, New York 17, N.Y.*

Chicago Pneumatic

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 6992



Here's How to Lubricate "Skyhooks"

Close-up of an installation in one of our great electric refrigeration plant—lubricant is released only when fitting and gun are in alignment.

"Go hang it on a skyhook" undoubtedly inspired the overhead conveyor, and while they have been a great boon to production and the saving of floor space, they do pose a very specialized problem of lubrication. Not only must there be adequate lubrication for a wide range of temperatures, but it should also be a controlled supply, to avoid the hazard of grease from overhead. Fauver Automatic Conveyor Grease Lubricators meet all of the problems accompanying the lubrication of "Skyhooks" . . . Send for complete information regarding this automatic, positive lubrication for your conveyors.

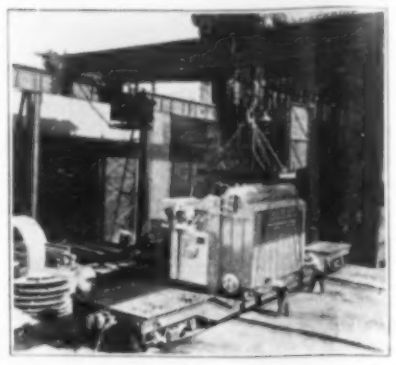
FAUVER Catalogue literature also includes a twenty page section relative to Hydraulic Hose Assemblies and Fittings; data regarding Bullseye Coolant Spouts, etc., a request will bring any part or all of this information.

J. N. FAUVER COMPANY, INC.
51 WEST HANCOCK, DETROIT 1
OFFICES...FLINT, GRAND RAPIDS
BRANCH...DAYTON, OHIO

If you write maker identify as IEN - 6994

BOILER . . Self-contained assembly, water tube design, oil and gas fired

Source: COMBUSTION ENGINEERING-SUPERHEATER INC.
200 Madison Ave., 17th Floor, New York 16, N. Y.



Automatic controls

Steam capacity ranges from 4,000 to 30,000 lb. per hr. in this new Type-VP C-E Package boiler. Pressure is to 250 pounds. Firing can be specified by oil or gas or both. Steam assisted atomizing burners are used for oil, ring type burners for gas. Pump and heater are included to handle oil. The boiler is shop assembled so it can be skidded and lifted from a car or truck to a plant foundation or floor.

The design is based on two horizontal drums with vertical bent connecting tubes located back of a water cooled furnace. Ratio of furnace wall cooling to furnace volume is designed for rapid heat absorption before the products of combustion enter the main tube bank.

A forced draft fan supplies air to the furnace at pressure sufficient to make a high stack or induced draft fan unnecessary. Controls are provided to adjust air and fuel supply automatically for fluctuating load. Protection also is maintained for flame failure, over pressure, low water level.

If you write maker identify as IEN - 6995

TESTING . . Methane detector to guard against explosion in a mine

Source: MINE SAFETY APPLIANCES CO.
21 Braddock Ave., Pittsburgh 8, Pa.

Gas unbalances bridge circuit

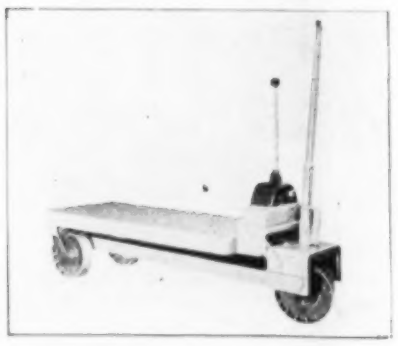
New instrument, to supplement small hand operated battery powered units and the usual flame safety lamps, installs in stationary position to sample return air in a mine ventilation installation. The instrument takes samples of the return air and analyzes them continuously to detect the presence of methane gas. It sounds an alarm, visible and audible, when the predetermined concentration of methane is present in the sample.

The sample flows over a heated platinum wire filament that forms part of a balanced electrical circuit. Methane is burned on the wire, increasing the temperature and electrical resistance, to throw the circuit out of balance and sound the alarm at a predetermined point.

If you write maker identify as IEN - 6996

TRUCK . . Hand hydraulic lift for skid mounted loads to five ton

Source: MARKET FORCE CO.
27 Garvey St., Everett 49, Mass.



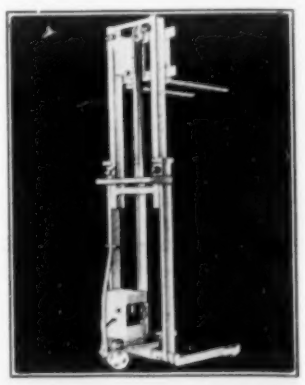
Ask for Catalog

Radially ribbed cast iron wheels, malleable iron front axle support and fifth wheel assembly, hardened bushings for the front lift links are standard in the company's 1953 hand lift truck. The wheels ride on ball bearings. The hydraulic lift mechanism retains its oil when the truck is tilted on its side.

If you write maker identify as IEN - 6997

ELEVATOR . . Portable one-ton unit, motor driven forks lift to 115 inches

Source: RAYMOND CORP.
35103 Madison St., Greene, N. Y.



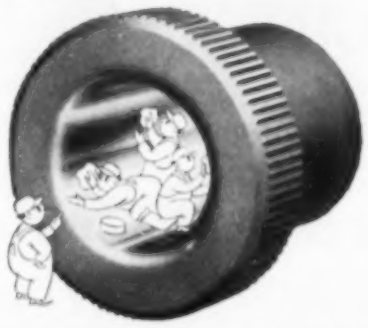
Pallet Stacker

Loaded pallets, measuring 30 to 48 in. in width and to 48 in. in length, can be lifted to 115 in. above the floor with this new elevator. Load capacity is one ton. Collapsed height of the wheel-mounted assembly is 83 inches. The elevator rides on an 8 by 2-in. steering wheel and 5 by 2-in. rear wheels. It is equipped with a ¾-hp. hoist motor for operation on 110-volt 60-cycle ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 6998

SUPER FINISH OF UNIVERSAL DRILL BUSHINGS reduces tool wear to a minimum



One sure way to cut excessive tool wear in your operations is to specify Universal Drill Bushings because their superfinish bores help reduce wear on production tools to an absolute minimum, especially in close tolerance work. The blended radius on the top inside diameter helps prevent tool hang-up and breakage. 100% concentricity and hardness tests insure accuracy, uniform high quality and long life. Knurled heads provide a quick, sure grip. Universal Drill Bushings are produced in a complete range of standard sizes and lengths. Orders for special dimensions will receive prompt attention. For complete information, write to the office nearest you—Universal Engineering Sales Co., 1060 Broad St., Newark 2, N.J.; 5035 Sixth Ave., Kenosha, Wis. — or our home office.

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

171-A

If you write maker identify as IEN - 6999

BARBER COLMAN

Wheelco Instruments

control heat precisely . . . record operations permanently

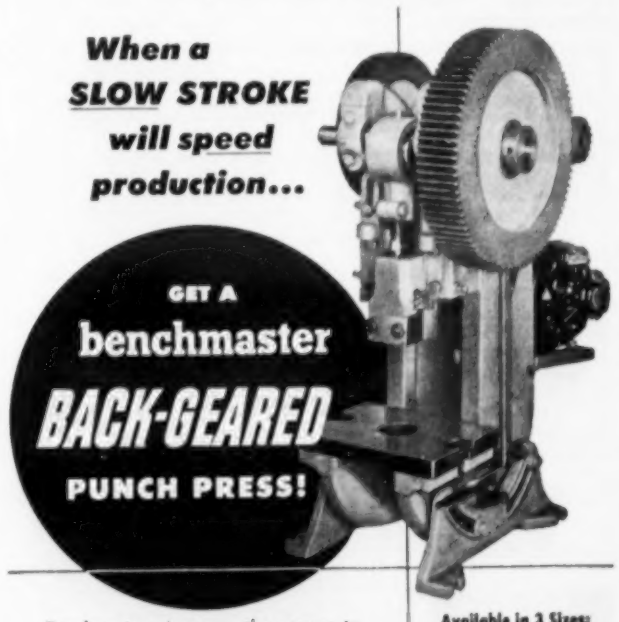
Modernize heating equipment. Cut supervisory time and costs. Get precise, dependable control and permanent record of operations with Wheelco's Capacilog Strip Chart Recorder. For all process variables, including temperature, speed, static strain load, AC-DC voltage and amperage. Measurements obtained with any primary element producing an electrical impulse. Direct deflection system is simplest, most direct. Low original cost, low maintenance, high operating stability. Thousands used in every industry. Bulletin C 2-2.

Factory-trained field engineers in all principal cities

WHEELCO INSTRUMENTS DIVISION · BARBER-COLMAN COMPANY
Dept. F, 1516 Rock St., Rockford, Illinois

If you write maker identify as IEN - 7000

When a SLOW STROKE will speed production...



Benchmaster gives you the answer to deep-draw and forming operations on small presses...The new BACK-GEARED Series! Built to the same rigid specifications as standard and deep throat models, but now equipped for SLOW, POWERFUL STROKES ranging from only 40 to 100 per minute! Benchmaster Automatic Friction Roll Feeds available in several roller widths for automatic feeding.

Available in 3 Sizes:
4 Ton Standard
4 Ton Deep Throat,
7½ Ton models.
Shut heights and other general specifications remain the same as standard models.

Ask for facts today!

P.S. *You still enjoy Benchmaster dependability and economy on the Back-Geared Models!*

benchmaster
MANUFACTURING COMPANY
1835 West Rosecrans Ave., Gardena, California

If you write maker identify as **IEN - 7001**

NEW SBS WATERLESS WASHSTATION*

"brings the washroom to the worker"* for only $52.50 per unit

(F.O.B. Saginaw, Michigan, towel dispensers not included)

Portable Wash-up units that save hundreds of man-hours . . . thousands of dollars!

The SBS Waterless Washstation is a complete hand-washing unit that requires no plumbing because it uses SBS-30 Waterless Skin Cleanser.

- **locates** close to work areas in factories, warehouses, or outdoors.
- **saves** up to $720 per unit annually by reducing time workers spend off the job washing up.
- **reduces** crowding in washrooms at lunch time and new shift time.
- **eliminates** use of harmful and irritating solvents.

SBS Waterless Washstation is heavy steel finished in grey-green enamel. Turret top has storage space, holds SBS-30 dispenser and two of your own paper towel containers. Removable cloth bag for used towels in base. Easy to fill dispenser has two-way feed adjustment that provides 1000 to 1500 washes before refilling. One turn of handle dispenses right amount of cleanser—no leakage, no waste. SBS-30 cleanser is just rubbed on, then wiped off along with all dirt and grease. Leaves hands clean, smooth and soothed. WRITE for complete information about SBS Waterless Washstations and our 30-day no-risk money back trial offer.

*Trademark

87

SUGAR BEET PRODUCTS CO., Saginaw, Mich.
Chemical By-Products Division, Dept. 5E

If you write maker identify as **IEN - 7002**

Foundry Match Plate Costs Slashed 84% With GPX

THESE SAME RUGGED PROPERTIES OF GPX®

CAN CUT COSTS FOR YOU

The rugged strength and extra toughness of GPX really paid off for the Cooper Alloy Foundry Co. of Hillside, N. J., world's largest producers of stainless-steel castings. Used as match plate mounting boards at this foundry, GPX did not warp or split under violent vibration. Its superior smoothness and moisture resistance drastically cut refinishing costs . . . reduced rejects. And hot, damp moulding sand did not adhere to or penetrate its armor-hard surface.

This is only one example of how GPX can outperform other materials. To learn more about this remarkable material and its potentials for solving your own problems, write today for complete information.

CHECK THESE GPX PROPERTIES:

GPX is made from top-quality, solid-core Douglas Fir Plywood surfaced with phenolic resin plastic under heat and pressure. It combines the structural strength and workability of plywood with the hard, smooth surface-toughness of plastic, plus these unique properties:

WEATHER AND WATER RESISTANT—unaffected by sun, rain or freezing. 20 times more resistant to water absorption than ordinary plywood.
ABRASION RESISTANT—10 times as abrasion resistant as ordinary plywood when dry; 30 times when wet.
CHEMICAL RESISTANT—resists hydrocarbons, alcohol, mild acids, organic solvents and acid fumes.
VERMIN RESISTANT—armor-hard surface resists termites, marine borers, mold and fungi.
SMOOTH AND STRONG—plastic surface is silky smooth, resists checking, grain raise and warping.
EASY-TO-WORK—easy to saw, drill, sand, nail, rivet, glue or paint.
VARIETY OF GRADES AND WEIGHTS—comes in three grades: GPX GENERAL USE, GPX GREEN Painting Grade, and GPX CONCRETE FORM; Within each grade is a complete range of thicknesses and overlay weights. Standard panel size is 4 x 8 feet.

GEORGIA—PACIFIC
PLYWOOD COMPANY
Dept. F, 614 North Capitol Way, Olympia, Wash.

For complete data, fill in and mail this coupon *today*

Georgia-Pacific Plywood Company F614
Plastic Plywood Division, Dept. F 614
Marsh Street
Port Newark 5, N. J.
Please send me further data on GPX
☐ General Use ☐ GPX GREEN ☐ Concrete Form
NAME.....
FIRM NAME.....
.....
FIRM ADDRESS.....
CITY.....STATE.....
POSITION.....

If you write maker identify as **IEN - 7004**

CRANE . . Ball bearing trucks and I-beam to ride overhead track

Source: ABELL-HOWE CO.
51-55 W. Jackson Blvd., Chicago 4, Ill.

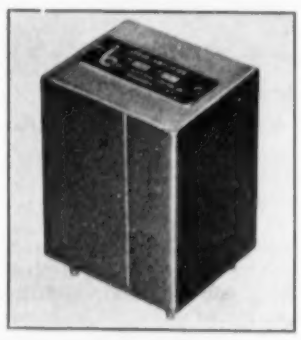
Specifications in Flexo-Crane Bulletin

Cast iron wheels are mounted on ball bearings in swivel brackets to make up the truck assemblies on this new Flexo-Crane. The trucks are supplied in pairs with an I-beam for load rating of ½ or 1 ton on spans ranging from 12½ to 30 feet. The trucks can be supplied alone for the user to apply on his own I-beam. They ride on 6-in., or larger, track I-beams. The crane load beam ranges from 7 to 10 in. for the ½-ton crane and from 8 to 12 in. for the 1-ton crane.

If you write maker identify as **IEN - 7005**

CONTROL . . Magnetic amplifier and transistor to operate servo motor

Source: INDUSTRIAL CONTROL CO.
Arlington Ave. & Straight Path Rd., Wyandanch, N. Y.



Negligible drift

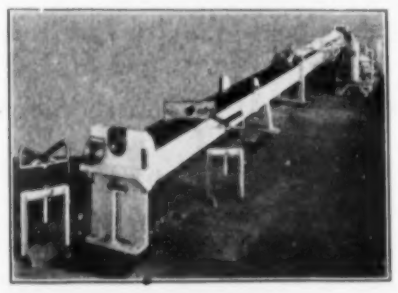
New combination of transistor and magnetic amplifier, in a hermetically sealed housing, provides drive control for a 400-cycle servo motor from an input signal such as a thermocouple, synchro equipment, potentiometer, photocell. The housing measures 2 by 2¼ by 3⅛ inches. **Weight is 17 ounces.**

Model 434-B is the designation. Application is in installations where critical processes must be monitored and controlled continuously without need for attention. The control circuit can be modified to drive speed and temperature controllers, clutch amplifiers.

If you write maker identify as **IEN - 7006**

TUBE MAKING . . Hydraulic machine to draw precision tubes, 20 ft. stroke

Source: RHODE ISLAND ENGINEERING & MFG. CORP.
568-72 S. Water St., Dept. DB, Providence 3, R. I.



Built to order

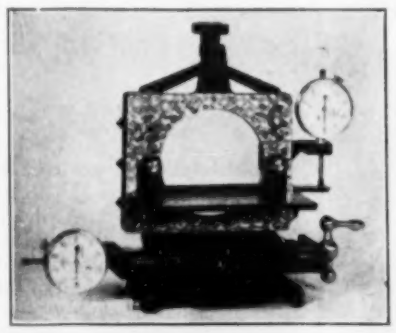
Pull rating is 112,500 lb., in this new hydraulic tube making machine, when hydraulic pressure is 3,000 lb. per square inch. Pressure is provided by variable volume pumping equipment driven by a 75-hp. motor. A high-volume low pressure gear pump cuts in for high speed on the return stroke of the machine.

Maximum draw is 20 ft. in standard design but can be specified longer. Overall length in the standard machine is 42½ feet. Width, including the pumping equipment, is about 9 feet. Weight empty is about 6 ton.

If you write maker identify as **IEN - 7007**

GAGE . . Coordinate stage positions work on optical comparator

Source: PORTMAN INSTRUMENT CO.
10 Manhasset Ave., Port Washington, N. Y.



For work locating

Precision adjustment, with movement to 1 in. in longitudinal, vertical and focusing directions, are provided by this new coordinate measuring stage. It is equipped with an adjustable right angle platform that can be positioned in any of three horizontal planes. The stage is available as an accessory for application on any standard make of optical comparator. Adjustments are read on Ames dial gages mounted in permanent positions.

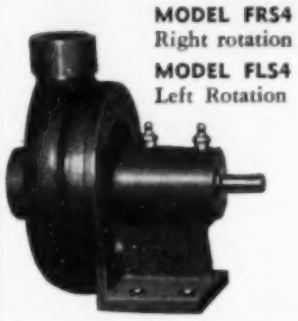
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7008**

COOL TOOLS WORK BETTER, LONGER

COOL TOOLS BEST WITH "FULFLO"

CENTRIFUGAL COOLANT PUMPS



MODEL FRS4 Right rotation
MODEL FLS4 Left Rotation

Save wear and tear; cut down production time—do things better and give tools longer life.

- constant pumping action
- spring tension packing
- no bearing in shaft
- carbon seal, if desired
- automatic adjustment

Direct connection:

1800 to 2400 rpm; 35 gal. at 1725 rpm; 20-ft. head; also with pulley for belt drive if desired

Write on your letterhead for professional edition of FULFLO MECHANICAL DATA BOOK

FULFLO THE FULFLO SPECIALTIES CO. Inc.
BLANCHESTER, OHIO

If you write maker identify as **IEN - 7009**

SHAWMUT'S NEW FORM 208 Amp-trap®

SAVES BOTH CIRCUIT *AND* CUSTOMER
(FOR 120/208 VOLT AC OR 125/250 VOLT DC NETWORKS)

POSITIVE PROTECTION AGAINST SUPERCURRENTS

Low voltage AC and DC networks give large utilities and their customers greater continuity of service and easy expansion of their systems. The only drawback to this type of network is the constant threat of danger from heavy short-circuit or fault currents. Shawmut's new FORM 208 Amp-trap eliminates this danger from these circuits. It prevents the destructive build-up of heavy fault currents so dangerous to office buildings, stores, hospitals, theatres, schools, etc.

USES & SPECIFICATIONS

Amp-trap FORM 208 is made for Entrance Switch Service, Underground Network Conductors, Distribution & Panelboards and other applications. It is built in Ampere ratings of 1000, 1200, 1600, 2000, 2500, 3000, 4000 and 5000 for Entrance Switch Service and for cable sizes from 4/0 to 1000 MCM. The watt (power) loss is probably lower than for *any other over-current protective device*. Hence it may safely be installed in vaults and steel enclosures and subjected to long continued loads.

LOW IN COST—EASY TO INSTALL

FORM 208 Amp-traps clear fault currents long before they can burn or wreck bus bars and switch gear. Yet they are small in size, low in cost and easy to apply. Write today and find out about FORM 208.

OUR 60 YEARS — Est. 1893

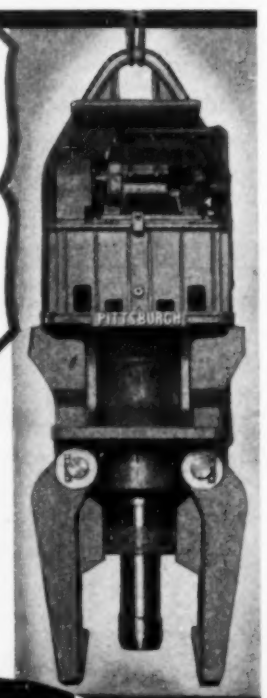
208 AMP-TRAP — *"Awake At The Switch"*

THE CHASE-SHAWMUT CO.
386 MERRIMAC STREET • NEWBURYPORT, MASSACHUSETTS

If you write maker identify as **IEN - 7010**

PORTABLE INGOT STRIPPER

can do your job



- **MORE ECONOMICAL**
- **MORE FLEXIBLE**

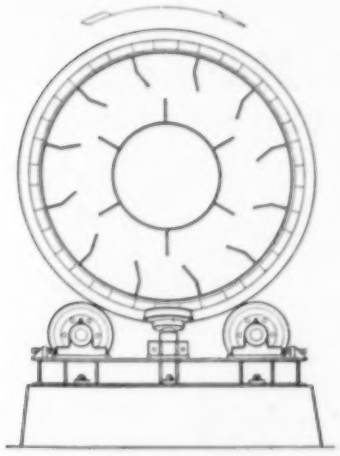
than conventional equipment

Write today for complete technical data

pittsburgh ENGINEERING & MACHINE CO.

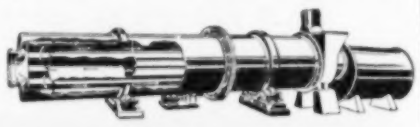
316 FARMERS BANK BLDG., PITTSBURGH 22, PA. • PLANT AT GLASSPORT, PA.

If you write maker identify as IEN - 7011



Double-Tube Dryer

The unique double-shell cross section and scientific baffling arrangement are features which help make the Ruggles-Coles XA Dryer the most efficient semi-direct heat dryer on the market. Coal-drying is one of its specialties.



Bulletin 16-D-38

HARDINGE
COMPANY, INCORPORATED

YORK, PENNSYLVANIA—240 Arch St. Main Office and Works

NEW YORK 17 • SAN FRANCISCO 11 • CHICAGO 6 • HIBBING, MINN. • TORONTO 1
122 E. 42nd St. 24 California St. 205 W. Wacker Dr. 2016 First Ave. 200 Bay St.

If you write maker identify as IEN - 7012

PRICES SLASHED UP TO 40% ON

New LABELON PRINTED FLATBACK TAPE

TRUE WHITE
PRECISION PRINTED
SELF-STICKING • ADHERES TIGHTLY
STRIPS OFF CLEANLY

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TO OPEN LIFT TAPE HERE → TO CLOSE BAR RESTICK TAPE

LABELON Printed FLATBACK
The new, low-cost tape for

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Choice of Widths, Lengths, Message

LABELON'S new printed, pressure-sensitive Flatback Tape looks better, sticks better, and COSTS UP TO 40% LESS! Cleaner TRUE WHITE surface. Can be written on with pen or pencil. Wide variety of widths and roll lengths, with your message, design, trademark, symbol, etc. printed in choice of colors.

Write today for prices and FREE SAMPLES
Dept. PR-I

LABELON TAPE CO., Inc.
450 Atlantic Ave., Rochester 9, N.Y.

If you write maker identify as IEN - 7014

CENTERING . . Microscope locates work to layout for machining

Source: PERKIN-ELMER CORP.
853 Main Ave., Norwalk, Conn.

$275 with adapter

Magnification is 30X for this new Model-11 microscope, sufficient to see measurements down to 0.0001 inch. The unit mounts on a machine spindle or on an offset bracket. **Centering** points on the work, or a template, are picked up and accurately located with the aid of cross hairs and concentric circles etched on the reticule. The opticals are arranged to erect the image so table movements made by the operator appear in true direction when observed through the eyepiece.

Application can be made on machine tools, particularly drills, milling machines, jig boring machines, grinders. The field of vision is ¼ in. in diameter. The standard assembly includes a ½-in. straight shank adapter.

If you write maker identify as IEN - 7015

PUMP . . Motor driven centrifugal in assembly for coolant circulation

Source: SHELLBACK MFG. CO.
11831-35 Hamilton, Detroit 3, Mich.

Medium duty unit

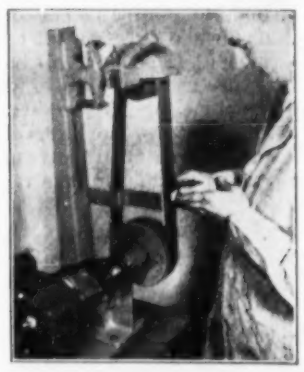
Model 8-5 is a new coolant pump with tank, hose and fittings to handle 12 gpm. against a 4-ft. head, 5 gpm. against 8 feet. The motor rates 1/15 hp. and mounts the pump impeller. The pump has an aluminum housing. It is designed to operate without excessive pressure on shutoff delivery.

The coolant tank holds 5 gal. and is equipped with a chip screen and ball handle. The ⅜-in. neoprene hose is 6 ft. in length. It terminates in a flexible nozzle and shutoff cock. Overall dimensions are 11 by 21 inches. List price is about $63.

If you write maker identify as IEN - 7016

GRINDING . . Abrasive belt machine mounts with motor on a work bench

Source: PORTER-CABLE MACHINE CO.
10-14 Exchange St., Syracuse 8, N. Y.



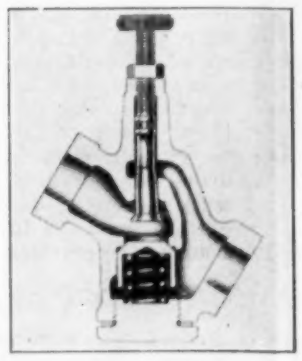
Quick belt change

Model CN-2 and Model BBS are two new abrasive belt machines mounting 2 and 2½-in. belts. The small unit is driven by a ½-hp. motor, the large one by a motor rating 1 hp. The belt can be positioned vertically, horizontally or at an angle. Operation is over a resilient contact wheel and takeup idler.

If you write maker identify as IEN - 7017

VALVE . . Adjustable throttle unit applies in exhaust line from cylinder

Source: ROSS OPERATING VALVE CO.
118-22 E. Golden Gate Ave., Detroit 3, Mich.



Limits exhaust

Speed Control designates a new adjustable valve to limit release of air from the exhaust side of a pneumatic cylinder and thus control the piston speed in the cylinder. Adjustment is made by turning a screw that will prevent the spring-backed plug from contacting the seat, by a large or small amount, when the operating valve is turned to exhaust position and air flow is from the cylinder. The new unit can be located on one or both exhaust connections from a double acting cylinder. It is available in six sizes from ¼ to 1¼ in. for its standard service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7018

Viscous Materials FLOW LIKE WATER

through
Parks-Cramer Jacketed Pipe and Fittings

You can't find a better way to convey asphalt, rosin, wax, sulphur, gums, syrups, or other high melting point solid or viscous materials than through Parks-Cramer Jacketed Lines.

Steam, hot water, hot oil, or Dowtherm keep the contents in a quick moving liquid state. Plug-ups are eliminated.

Jacketed Cocks and Fittings are cast in semi-steel, Ductile iron, Ni-Resist and many other materials.

Pipes and Fittings are made in standard sizes with 1¼", 1½", 2", 3", and 4" inside diameter, and include Two-way and Three-way Cocks, Tees, Crosses, 90° and 45° Elbows, and Expansion Joints and Strainers, also 2" and 3" Relief Valves.

Write for Bulletin No. 152E

Parks-Cramer Company
ENGINEERS and CONTRACTORS
Fitchburg, Massachusetts

If you write maker identify as IEN - 7019

Important savings at Eureka-Williams Corp. because

ALL drawings are reproduced on Kodagraph Autopositive Paper

In print production . . . no wear-and-tear to valuable originals. The Eureka-Williams Corp., Bloomington, Ill., protects its ever-growing investment in drafting time and dollars by using low-cost Kodagraph Autopositive intermediates to obtain the desired number of shop prints. These intermediates, unlike the original drawings, will not smudge or lose line density with repeated printings . . . will produce highly legible prints time after time. Furthermore, their dense photographic black lines and evenly translucent base permit running the prints at uniform, practical speeds.

These positive photographic intermediates are produced *directly* . . . without the negative step. A standard print-making machine is used for exposure . . . standard photographic solutions for processing. A fast, easy room-light operation *that saves dollars!*

In drafting . . . revisions made 7 times faster. The basic designs for Eureka-Williams oil burners, furnaces, and vacuum cleaners are being modified constantly for the production of various models. Here's just one way Autopositive is used to boil 3 days of drafting time down to 3 hours—

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2. The draftsman deletes the unwanted parts of this print with a razor blade.
3. From this, another Autopositive intermediate is made.
4. Then the draftsman only has to add the new design . . . and a new "file original" is ready. From it, additional Autopositives can be made for print production.

Get complete facts on Kodagraph Autopositive Paper, which you or your blueprinter, can process quickly, at low cost. Write for a free copy of "New Short Cuts and Savings."

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 7021

Safety Lesson No. 1

"MISSING LINKS"*
Repair Chains Better

Do away with danger of opening up under heavy load by specifying Laughlin "Missing Links".

Pressure fitting of matched halves with special dies insures perfect fit, eliminates tendency of loose-fitting links to shear.

Links, not rivets, carry the load. Interlocking lugs grip firmer, bear the weight. Ordinary round lugs fitted into round holes don't have holding power.

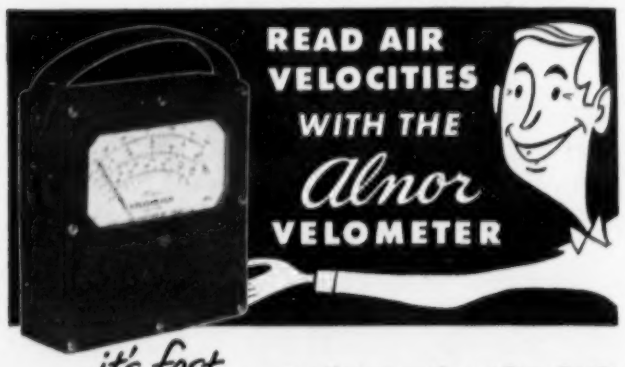
"Missing Links" are also supplied in an exclusive pear shaped design in sizes for 3/8" to 1 1/8" chain. Free Catalog No. 150 lists full line.

For Safety's Sake . . . Say LAUGHLIN

THE THOMAS LAUGHLIN CO.
*T. M. REG. 61 Fore Street, Portland, Maine

Buy from your local distributor

If you write maker identify as IEN - 7022



it's fast . . . you get instant, precise readings directly from scale face . . . no need for reference charts or calculations. Measure air flow through ducts, grilles, motors, spray booths, etc., or in the open.

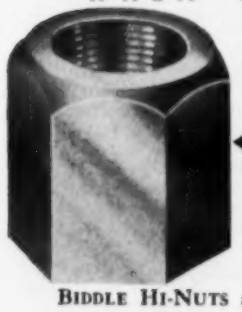
it's accurate . . . brings laboratory standards of air velocity measurement to the production line, mine, mill . . . anywhere. Needs no special care or handling . . . anyone can use it and get accurate results.

it's portable . . . completely self-contained, hand-held. Rugged construction and sturdy case protect the Velometer from usual hazards of portable use. Available in scale ranges to 24,000 f.p.m. Wide selection of jets and fittings assures adaptability of Alnor Velometer to your application. Get full details and prices, write for Bulletin 2448-G. Illinois Testing Laboratories, Inc., Rm. 517, 420 N. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 7023

Twice the Grip...
WHEN GRIP COUNTS



BIDDLE HI-NUTS

BIDDLE HI-NUTS are made for greater gripping power. Where vibration is high, where motion takes over, the additional gripping power of BIDDLE HI-NUTS takes control. Made from B 1113 steel, machined from the bar, BIDDLE HI-NUTS are threaded to SAE Specifications. Sizes from 1/2 inch to 1 1/4 inches, heights from 15/16th to 1 3/4 inches, with diameters across the flats from 3/4 to 1 3/4 inches. Put extra grip into the jobs where extra grip counts . . . with BIDDLE HI-NUTS.

Write today for more complete information and specifications.

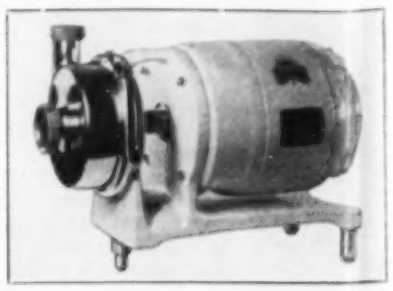
NATIONAL SCREW MACHINE PRODUCTS ASSOCIATION

BIDDLE SCREW PRODUCTS COMPANY
SHERIDAN, INDIANA

If you write maker identify as IEN - 7024

PUMP . . Single stage centrifugal, sanitary design for liquid transfer

Source: TRI-CLOVER MACHINE CO.
2807-11 60th St., Kenosha, Wis.



Ask for Catalog 250

Unimount designates a new design of motor driven sanitary pump in the Pump King line. The new unit is designed for operation at 1,800 and 3,600 rpm. It is employed where high speeds are required through heaters, coolers, filters, clarifiers in liquid food processing operations which must provide for sterilization.

The impeller is patented screw design. The shaft rides in an inert carbon seal that can be removed for cleaning. The light weight head is secured in place with the company's ring clamp for quick removal, upon lifting the locking lever. The line includes pumps with capacity to 1,250 gpm. free.

If you write maker identify as IEN - 7025

POLISHING . . Portable tool, also to drill, grind, sand, wire brush

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.

Accessories to order

No. 966 is a new universal electric portable tool for operation on a 110-volt circuit, or on 220 volts to specification. It mounts angle handles on the motor housing. It takes a buffing or sanding pad for operation as shown in the illustration. A 1/4-in. Jacobs chuck can be specified for drilling and to take wheels mounted on arbors. Weight is 5 pounds. Height is 7 3/4 in. in the assembly shown. Speed is 3,300 rpm. for the 6-in. disc.

If you write maker identify as IEN - 7026

TIMING . . Interval unit, electronic control, relay contacts

Source: MEG-ELECTRONIC
P. O. Box 607-A, Wantagh, N. Y.

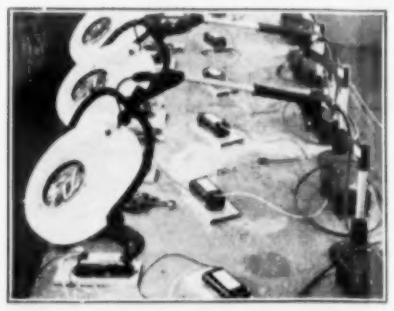
Dependable operation

Timing is started, with this new electronic equipment, by momentarily closing the control circuit. Relay contacts are actuated, to remain open or closed, for the duration set on the timer dial. Two overall intervals are selected by operating a switch for 0.5 to 6 sec. or 5 to 60 seconds. The interval is regulated automatically to compensate for line voltage variation when timer is used to control "on" time of an electric heater in a repeat cycle.

If you write maker identify as IEN - 7027

MAGNIFYING . . Illuminated fixture with 5 in. lens and Circline lamp

Source: ENGINEERING DEVELOPMENTS INC.
P. O. Box 1046-A, Portsmouth, R. I.



Strain free vision

New assembly of the Magnivision magnifier, previously described IEN-2630-53, is equipped with a sufficiently long horizontal support arm so the base can be mounted on the rear of an inspection bench to leave the working area clear. The illustration shows a line of the new units in place. Each illuminates without casting shadows and provides a clear detail view of the work.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Plenty of product information in new literature — page 78

If you write maker identify as IEN - 7028

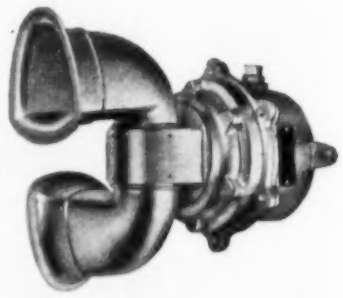
WHITNEY-JENSEN
METAL WORKING TOOLS
FOR 43 YEARS

● Portability and power are combined in this punch by use of the ball bearing screw principle, which enables us to pack 14,000 lbs. of punching pressure in a tool weighing only 9 1/2 lbs. Capacity is 3/8" hole thru 1/4" mild steel. Base is available for fixed-position use on bench. *Write for our new Catalog.*

WHITNEY METAL TOOL COMPANY
200 FORBES STREET • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 7029

FEDERAL HORNS save precious time too!



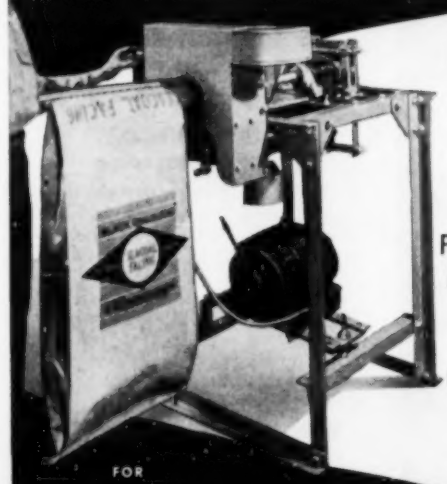
Warnings, alarms, routine plant signals . . . Federal vibratory horns perform them all superlatively . . . *and* give you the added advantage of following short, quick code impulses which enable you to page your executives and foremen above heavy industrial noises . . . eliminates "searching parties" . . . outperforms gong signals.

Write for Federal's Industrial Signals Catalog now. There you'll find a complete line of heavy-duty, precision-built horns, one of which will be ideal for your application.

FEDERAL ENTERPRISES, Inc.
Formerly Federal Electric Company, Inc.
8745 South State Street Chicago 19, Illinois

If you write maker identify as IEN - 7030

Investigate the 1953
BLACK DIAMOND AUTOMATIC
valve bag packer



Designed to pack dry granular or powdered free-flowing materials
★
Push-button control
Moderately priced
Easy to install
Lowest maintenance costs
Performance guaranteed
★

FOR FURTHER INFORMATION WRITE TO BLACK PRODUCTS COMPANY
13513 S. CALUMET AVE. • CHICAGO 27, ILL.
MANUFACTURERS SINCE 1912

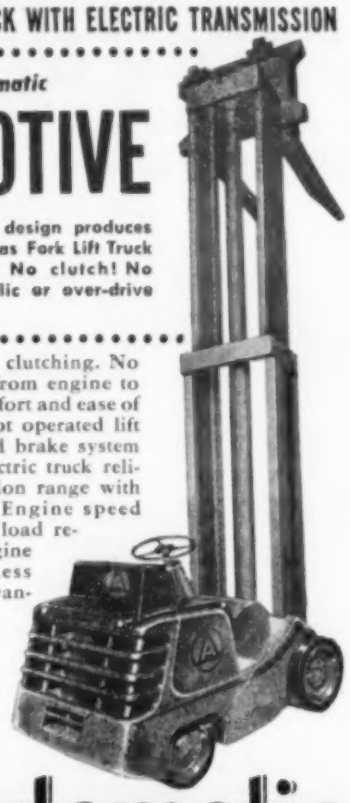
If you write maker identify as IEN - 7031

AMERICA'S FIRST GAS TRUCK WITH ELECTRIC TRANSMISSION

The new Automatic

DYNAMOTIVE

Entirely new engineering design produces America's first and only Gas Fork Lift Truck with *Electric Transmission*. No clutch! No gears to shift! No hydraulic or over-drive mechanism.



No engine shock due to clutching. No mechanical connection from engine to drive unit. Maximum comfort and ease of operation for driver. Foot operated lift and tilt. Interlocked dual brake system for maximum safety. Electric truck reliability. Infinite acceleration range with minimum power loss. Engine speed automatically adjusts to load requirement. Minimum engine wear—maximum life! Less fuel consumption. All advantages of torque converters and overdrive without mechanical devices. Minimum down time. Maximum accessibility. No aisle projections.

For further data on the new Dynamotive Truck, write:

Automatic®

109 W. 87th St., Dept. H-3, Chicago 20, Ill.

WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC DRIVEN INDUSTRIAL TRUCKS

If you write maker identify as IEN - 7032

BERRY *Rotodraulic*

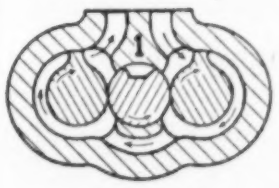
TRADE MARK

Rotating Piston PUMP or MOTOR

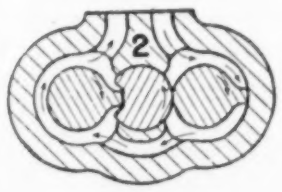
Operation as a pump or as a motor is continuous, smooth, quiet, without pulsation. Basic simplicity gives the design long life with low maintenance as pumps in elevator service or on machine tools. Used as transmission in oil fields, mines, steel mills, mobile vehicles, the rugged construction endures many thousands of hours of rough treatment in all climates without servicing.

AS A MOTOR

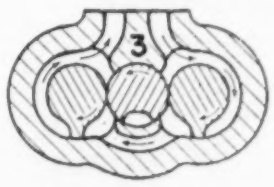
All three members are geared together in a 1:1 ratio. Input shaft is on center member.



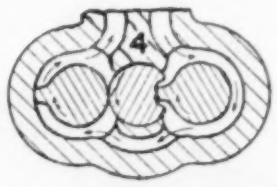
POSITION 1..Both pistons facing up, oil entering the right-hand port, driving both pistons in clockwise direction, exiting through the left port.



POSITION 2..Both pistons rotated to right, oil bypassing the left-hand one to the exit. The right-hand piston sealing against the center rotor or rolling seal.



POSITION 3..Both pistons rotated to face down, the oil driving both while the center rotor seals both pistons.



POSITION 4..Both pistons rotated to the left, the oil bypassing the right one and driving the left one. The left piston is sealing against the rolling seal.

Two pressure ratings are 500 and 1,500 PSI. Rating is 60 to 240 GPM. for the 50-PSI. assembly with one to four pumping chambers on a common shaft. Rating is 9.4 to 28.2 GPM. for the 1,500-PSI. pump with one to three chambers.

CATALOG 5209

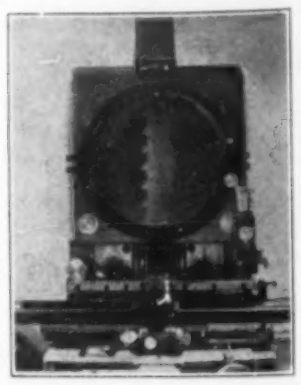
Explains action, shows sections and combinations, includes performance specifications and selection data.

Berry Division
Oliver Iron and Steel Corporation
1019 Oliver Building • Pittsburgh 22, Penna.

If you write maker identify as IEN - 7034

GAGE . . Optical comparator and fixture to check broach teeth

Source: OPTICAL GAGING PRODUCTS INC.
24-28 Forbes St., Rochester 11, N. Y.



Built to order

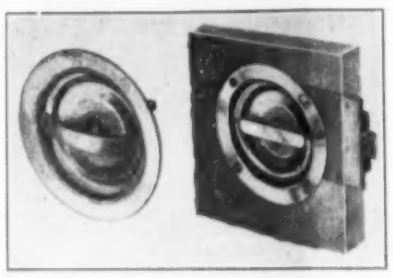
New combination of the Eastman Kodak contour projector, previously described IEN-3194-50, and a new indexing fixture makes it possible to check individual teeth in a broach. The equipment places an image of a number of the broach teeth in superimposed position over the screen layout with magnification selective between 10 and 100X in six steps by turning a dial.

The fixture is placed and locked on the work stage of the instrument. The fixture base measures about 34 in. in length and on it is a broach carrying slide and indexing head. The equipment is typical of special gaging set-ups the company is prepared to make for specified work.

If you write maker identify as IEN - 7035

LOCK . . Flush handle design for small and medium sizes of doors

Source: A. L. HANSEN MFG. CO.
5051 Ravenswood Ave., Chicago 40, Ill.



Ask for Folder 90

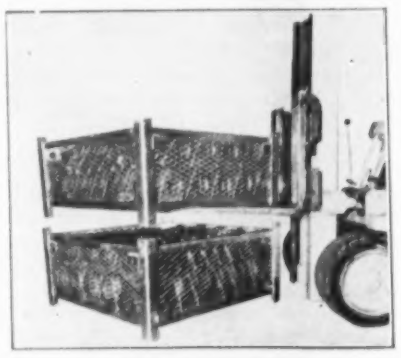
Pivoted handle, in the shape of a half-circle, folds into a recess in this new flush-handle lock. The bushing is located 4 in. from the striker bolt end of the assembly to make the lock adaptable for use also with curved, T-type and offset handles.

The company also is prepared to supply the handle, recessed flush plate and spindle as a separate assembly, as shown to the right in the illustration. This view shows the curved rather than the pivoted handle construction.

If you write maker identify as IEN - 7036

HANDLING . . Steel parts boxes made of expanded steel on steel frame

Source: MORRISON STEEL PRODUCTS INC.
603 Amherst St., Buffalo 7, N. Y.



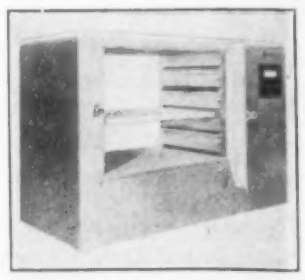
To move and store

Load capacity is 3½ ton for this new 50 by 50-in. Stak-Box. It tapers a little, to measure 49 by 49 in. at the bottom, so one box can be stacked upon another. Overall height is 24 inches. The steel frame is fitted with expanded steel sides, ends and bottom. Reinforcing bands are welded across the bottom. Hook plates are provided at the four corners for crane handling.

If you write maker identify as IEN - 7037

HEATING . . Electric oven circulates heated air to 550 deg. F.

Source: PERENY EQUIPMENT CO.
891-95 Chambers Road, Columbus 12, Ohio



Details on request

Strip heating elements located in the housing around the insulated chamber of this new Model DRF-30 oven supply the heat. Air is circulated by a built-in fan driven by a ¼-hp. motor located behind the wall at one end of the work chamber. The chamber measures 30 by 24 by 24 inches. Heat flow is controlled by adjustable louvers beneath each shelf bracket at both ends of the chamber. An adjustable vent opening permits addition of outside air.

The oven rates 6 kw. on 220-volt 3-phase 60-cycle ac. Temperature is regulated by a No. 292 indicator and controller with a 12-in. thermocouple and lead wire. The equipment includes an on-off power control switch and a safety pilot light.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7038

Yes, B&W Kaocast is versatile. This 3000F refractory castable speeds repairs . . . eliminates need for large inventory of special shapes. Discuss easy-to-use Kaocast with your B&W Refractories Engineer.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y
WORKS: AUGUSTA, GA. R-418

If you write maker identify as IEN - 7039

DE WALT is a "Jack-of-all-cuts" for pattern shop use!

More than just a "jack-of-all-cuts," De Walt® is a *master* of every one... making each fast and accurately!

You'll find De Walt the most versatile, the most easily adaptable power saw for *any* cutting purpose—whatever it is—especially in a pattern shop.

Wherever they're used, De Walt Power Saws streamline cutting operations...increase production...decrease costs. Write for illustrated catalog to: De Walt Inc., Dept. IEN-6, Lancaster, Pennsylvania.

De Walt Inc. Lancaster, Pa.

DE WALT

POWER SAWS

Subsidiary of AMERICAN MACHINE & FOUNDRY COMPANY, *New York*

If you write maker identify as IEN - 7040

Chicago MOUNTED Wheels

...now even better with **79E BOND**

Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

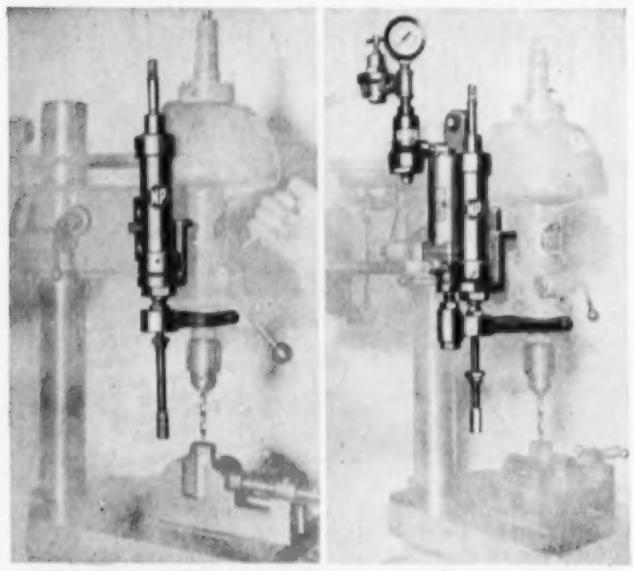
CHICAGO WHEEL & *Mfg. Co.*
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 7041

DOUBLE YOUR MONEY BACK!

• Users tell us that MICRO-KLEAN cartridges have twice the effective life of ordinary filter cartridges. But we'll leave it up to you. Try a MICRO-KLEAN cartridge. If it doesn't outperform any cartridge you've previously used, we'll send you double your money back. (Standard cartridges are 9¾" long x 2¾" O.D., in densities of 10, 25 and 50 microns.) Write to Cuno Engineering Corp., Dept 699M, South Vine Street, Meriden, Conn.

If you write maker identify as IEN - 7042



POWER-CHECK SPARES THE SHOCK... spares the machine tool, the die, the work! Easy to adjust to exact limits. Especially suitable for drill presses, milling machines, etc.

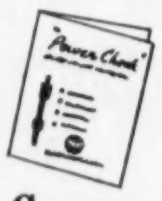
Where power needs control

NP Power-Check Gives Precision Control

Here's your answer to fewer rejects, cleaner work, long tool life and less down time on all your machine tools.

NP Power-Check automatically governs the power at any point of the stroke for which you set it, on either manual or pneumatic feed. It eliminates the need for special skills, is completely self-contained and easily applied. 2, 4, 6, 8-inch strokes.

What's your application? Send for free Bulletin No. DC-208-B.



NP POWER-CHECK
National Pneumatic Co., Inc.
Boston 19, Mass.

NATIONAL PNEUMATIC CO., INC.
125 Amory Street, Boston 19, Mass.

Please send me without charge a copy of your Bulletin No. DC-208-B describing the *Power-Check*. We are interested in its possible application to

(Type of machine) .....

Your Name .....

Company Name .....

Street and No. .....

City ..... *Zone* ..... *State* .....

If you write maker identify as IEN - 7044

GAGE . . Vernier caliper, 0.025 in. graduations to 26 inches

Source: HOMESTRAND INC.
10 Homes Ave., Dept. IEN-1, Larchmont, N. Y.

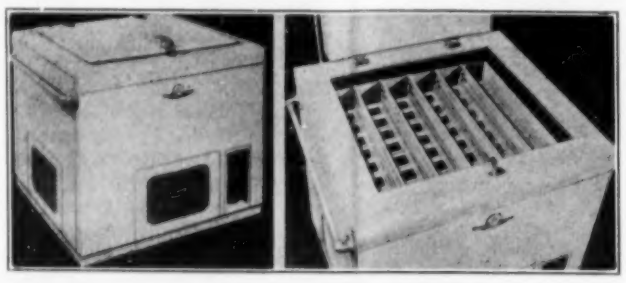
Made in Sweden

New caliper is made of hardened tool steel with smoothly moving fitted slides in open face assembly for scale visibility. Two scales are graduated in 0.025 in. divisions with evenly cut lines narrow and uniform in width and depth. Three overall lengths are 12, 24 and 26 inches. The slide can be set to approximate position for internal or external readings and then adjusted to final position by turning a thumb screw that rides in a clamp back of the movable jaw.

If you write maker identify as IEN - 7045

REFRIGERATING . . Cabinet unit is designed to store aluminum rivets

Source: ACE CABINET CORP.
1457 Broadway, Room 309, New York 36, N. Y.



Holds rivets ready to use

Six racks are arranged to take 48 individual rivet canisters in this new ½-hp. electric refrigerator. The unit will hold 48 lb. of aluminum rivets. Temperature is controlled by a thermostat. Overall dimensions are about 39 by 36 by 41 inches.

If you write maker identify as IEN - 7046

GENERATOR . . DC. converter for 115 volt single phase ac. output

Source: CARTER MOTOR CO.
2642-46 N. Maplewood Ave., Chicago 47, Ill.

Manual frequency control

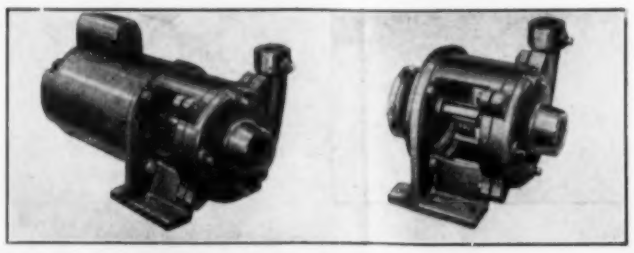
Input is on battery power or a dc. line ranging from 12 to 220 volts in a new range of custom sizes of the Super converter, previously described IEN-7682-45. The new units rate 300, 400 and 500 watt ac. output contrasted with the initial 250 watt rating.

Typical installations are for operation of amplifiers, business machines, recorders, motion picture equipment, large screen TV receivers, marine and mobile communicating equipment. The frame is cast with pole shoes and field ring in one piece. Transformer grade armature laminations are cross stacked to minimize eddy current and hysteresis losses. Magnet wire is quadruple insulated.

If you write maker identify as IEN - 7047

PUMP . . Centrifugal design for water circulation, liquid transfer

Source: F. E. MYERS & BRO. CO.
902-6 S. Orange St., Dept. 29, Ashland, Ohio



Belt or motor drive

Centri-thrift is a new centrifugal pump for operation at 3,450 rpm. to provide capacity to 50 gpm. and operate against heads to 92 feet. It is available with ⅓ to 1-hp. motor or with a sheave for V-belt connection to the user's motor. Assembly includes a stainless steel shaft, removable bronze wear ring and a rotary shaft seal. The bronze closed type impeller is dynamically balanced.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7048

SPEED UP SMALL PARTS ASSEMBLY

Parts feed automatically toward front—end reaching and fumbling.

Bins taper toward front to form convenient semicircle—keep all bins within easy reach.

Stacking, locking construction for rigid set-ups, easily changed when necessary.

All-welded construction. Smooth, folded edges.

New-design, adjustable hoppers provide increased capacity and permit regulated flow of parts according to sizes and weights.

Two-sizes—tapered or straight sides.

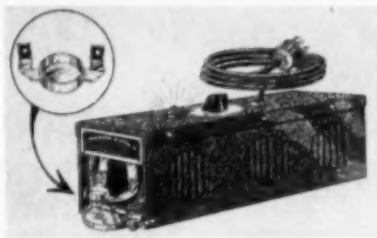
IMMEDIATE DELIVERY
Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa
Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN - 7049

SOLDERING MACHINE

Transformer type • heats small cup of solder • will strip plastic insulation



New **Straight-Line** machine mounts on a bench, presents a small cup of molten solder at the front. The operator brings the work to the cup, has both hands free, can concentrate on the work with no tool to handle. Soldering takes place instantly. Solder temperature is adjustable at a dial on top.

A rheostat soldering operation that used to take 60 seconds overall now is done on the **Straight-Line** machine in 4 seconds. You also can use the unit to strip plastic insulation from wire, to solder glass terminals using hot vegetable oil, to dip solder, to cut plastics.

Rating is 200 watts on 115-volt 60-cycle ac. Dimensions are 4 by 12 in. by 4 in. in height. Details in 4-page bulletin, "New Techniques."

$49.00 postpaid

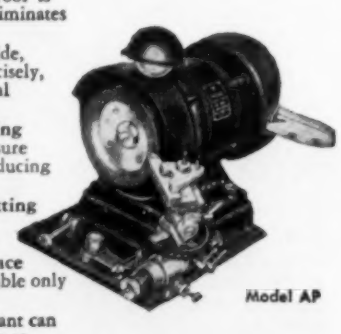
LYON RURAL ELECTRIC CO.
Dept. IEN-6 **San Diego 12, Calif.**

If you write maker identify as IEN - 7050

For Lowest Cost Precision Grinding!

New Moderately Priced Precision Grinder Ideal for the Average Plant:

1. **Saves Diamond Wheels!** Tool is rocked across wheel face — eliminates scoring and grooving.
2. **Real Precision!** All front, side, and top angles can be set precisely, in both vertical and horizontal planes.
3. **Saves Valuable Hard Cutting Tools!** Eliminates rigid pressure and localized overheating, reducing the danger of cracks.
4. **Keen Durable Straight Cutting Edges!** Perfect grinding to exact angles.
5. **Unskilled Operators Produce Fine Work!** Previously possible only on high priced machines.
6. **Moderate Price!** Average plant can do its own precision grinding at low cost.



Model AP

Bench and Floor Types—Wet or Dry Models
Prices from $274.50 up
Write for full information

THOMAS PROSSER & SON
62 SOUTH STREET, NEW YORK 5, N. Y.

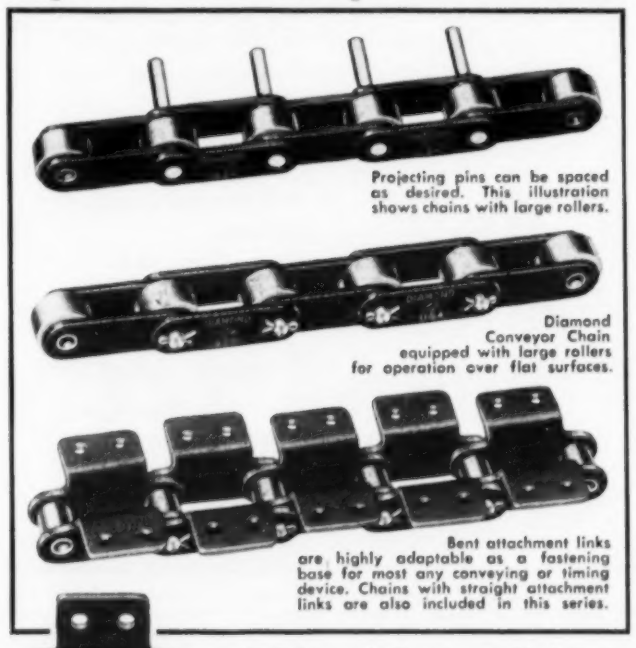
If you write maker identify as IEN - 7051

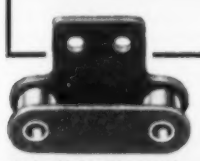
If you write maker identify as IEN - 7052

DIAMOND

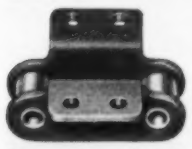
CONVEYOR CHAINS

Improve Machinery Performance

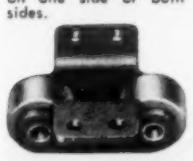




Roller Link with straight Attachment Link Plate on one side. Also furnished with plates both sides.



Roller Links can be supplied with bent plate on one side or both sides.



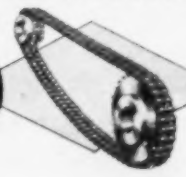
Similar to above but chain has large Rollers to roll on flat surfaces.

● Diamond Conveyor Chains are manufactured to the same high standards as Diamond Roller Chains. Uniformity of quality — high tensile strengths — and the wear-resisting properties of the hardened pin bushings and rollers result in longer-life performance, and steady maximum output.

A wide selection of pitches, chain designs, and attachments are available for materials handling operations — packaging, boxing, labeling, wrapping — and for timing and control mechanisms.

Conveyor Chains & Sprocket Bulletin 29, gives complete information, illustrations and useful data. Copy will be mailed on request.

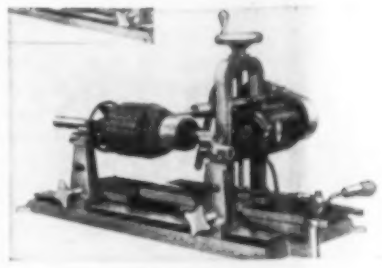
DIAMOND CHAIN COMPANY, Inc.
Dept. 465, 402 Kentucky Avenue, Indianapolis 7, Indiana
Offices and Distributors in All Principal Cities
Refer to the classified section of your local telephone directory under the heading CHAINS or CHAINS-ROLLER
BETTER CHAINS MAKE BETTER MACHINES

DIAMOND  ROLLER CHAINS

If you write maker identify as IEN - 7054

MILLING . . Undercutting machine with horizontal and vertical feed

Source: MARTINDALE ELECTRIC CO.
1353 Hird Ave., Cleveland 7, Ohio



Universal motor

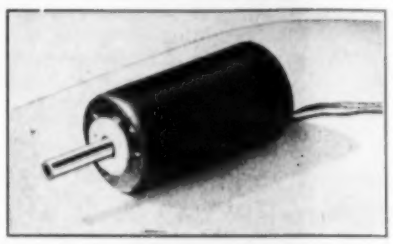
Model HV-3 is a new commutator undercutting machine for both horizontal and vertical commutator slots. Its motor driven spindle is mounted on a ball bearing carriage. Two spindles are available with ⅛ and $\frac{3}{16}$-inch arbor. Feed action is by turning a handwheel and operating a lever on the new machine.

The machine will undercut horizontal commutators to 6½ in. in both diameter and length. It will handle vertical commutators to 6 in. in diameter. Distance between centers measures 20 inches. V-supports, with 1-in. vertical adjustment, are provided for long shafts. Maximum armature capacity is to 12 in. in diameter on the V-supports or 10½ in. on centers.

If you write maker identify as IEN - 7055

MOTOR . . 400 cycle ac. for blowers, controls, instruments

Source: EASTERN AIR DEVICES INC.
587 Dean St., Brooklyn 17, N. Y.



Miniaturized

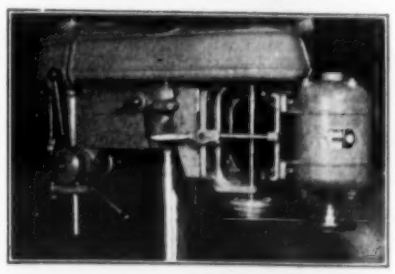
Diameter, over the housing, of this new Model EAD motor is 1 inch. The unit is available for single, two or three-phase 400-cycle operation at speeds of 10,500 and 21,000 rpm. It also can be supplied for single or two-phase 400-cycle operation at about 7,000 rpm. Rating of about 0.01 hp. can be obtained.

Model D21UHP-1, shown in the illustration, is a capacitor run induction design for 115-volt 400-cycle single-phase operation at 11,000 rpm. It rates 0.03 hp. Weight is 3½ ounces.

If you write maker identify as IEN - 7056

DRIVE . . Four speed transmission for application on a drilling machine

Source: BOYD MACHINE INC.
709-13 E. 4th St., Royal Oak, Mich.



About $50

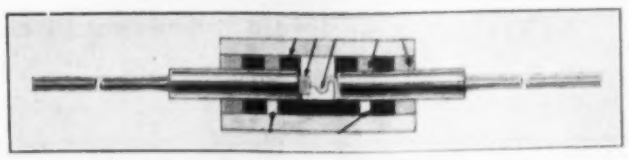
Vari-Speed Changer is a new four-speed transmission consisting of two V-belt sheaves, a countershaft, a belt and a mounting bracket. The bracket includes a base for the driving motor. It mounts in the usual motor position as shown.

Application can be made on any 17 to 20-in. drilling machine. Speed range is from 125 to 4,000 rpm. with a 1,725 rpm. motor. A lever between the bracket and the motor base provides for belt tension adjustment and for release of the tension when speed is to be changed. The countershaft is carried in ball bearings. The assembly has capacity for motors to 1 hp.

If you write maker identify as IEN - 7057

ELECTRONIC PART . . Crystal diode hermetically sealed in opaque glass

Source: INTERNATIONAL RECTIFIER CORP.
1519-23 E. Grand Ave., El Segundo, Calif.



Operates without power supply

New diode consists essentially of an inner housing of low-loss phenolic material over which an outer housing of glass is assembled and sealed. The double construction prevents entrance of moisture and isolates the unit electrically. Shock and vibration resistance result from the use of a non-skid germanium crystal surface. Retention of the original whisker adjustment is maintained by welded anchor pins.

The body is maximum at ½ in. in length. Shoulder extensions are ⅛ in. on either end. Twenty-two gage tinned wire leads extend an additional 1 or more inches. Body diameter of the new diode is 0.230 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7058

Free Bulletin **describes 3-way protection features of rugged Tri-Clad motors.**

Protection against *damage . . . breakdown . . .* and *wear!* That's what you get when you buy a G-E Tri-Clad motor. Easily adaptable for all general-purpose applications where compactness and low up-keep are "musts", they offer long, service-free operation.

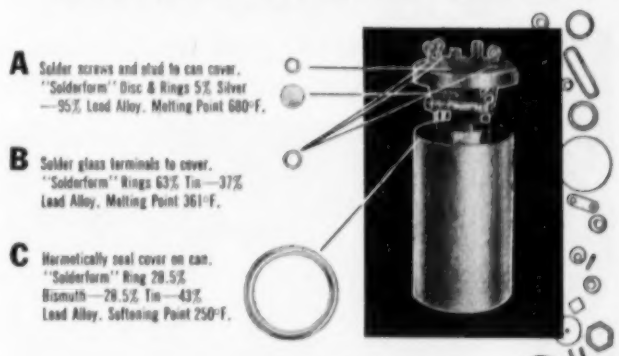
Available in sizes from ½ to 5 horsepower G-E Tri-Clad single-phase capacitor motors weigh 15 to 20 percent less than other types depending on the rating.

Order your Tri-Clad motors through any one of the more than 100 Graybar offices located throughout the nation. Your nearby Graybar Representative will be glad to help you select the motor best suited to your power needs. Graybar Power Specialists are also available to help plan major electrical power installations. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 313-136

Call Graybar *first* for . . . Everything Electrical GraybaR Electric Company

If you write maker identify as IEN - 7059

3 Soldering Operations in 1 Easy as ABC with KESTER "SOLDERFORMS"



Here's a typical example of a tough resistance soldering job involving progressively lower melting temperatures. Kester "Solderforms" made sure this high precision oscillator coil came through every test successfully.

WRITE TODAY for free "Solderform" samples and literature.

KESTER SOLDER COMPANY
4211 Wrightwood Ave. • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as IEN - 7060

APPLY GLUE 30% FASTER

direct from original containers!

Air operated Versatal Pumps can save up to 30% of labor costs in handling glue by delivering material direct from original containers to point of application.

Versatal Pumps end troublesome handling, transferring, old-fashioned and expensive methods of application. Save time, work, money!

Each pump serves up to six outlets. Pressure sends adhesives through as much as 1,000 feet of hose or pipe.

FREE! A book of ideas on how Alemite Versatal Equipment can help solve your material handling problems. Write: Alemite, Dept. 8-63, 1830 Diversey Parkway, Chicago 14, Illinois.

ALEMITE Versatal SPRAY PUMP EQUIPMENT

If you write maker identify as IEN - 7061

The Wingfoil Straight-Line Duct Fan is Unexcelled

For Supplying Fresh Air or Exhausting Air containing Paint Spray, Dirt, Steam, Explosive Vapors, etc., in Any Volume or Pressure

It may be used as a roof intake or exhaust, or it may be inserted in a run of duct, occupying no extra space. The motor is located outside the casing, driving the Wingfoil "non-overloading" fan by means of an enclosed V-belt. It is light, compact and easily handled, and may be mounted either horizontally or vertically.

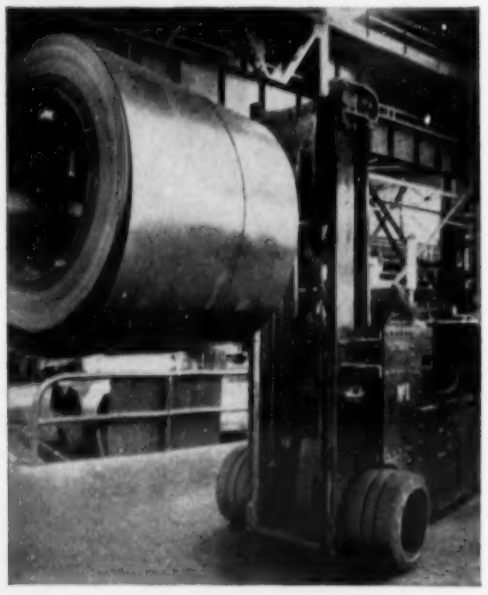
Write for Bulletin F-10

L. J. Wing Mfg. Co. 160 Vreeland Mills Road Linden, New Jersey

If you write maker identify as IEN - 7062

B.F.Goodrich

TW ANALYSIS solves your industrial tire problems, saves you as much as 50%



● What's your industrial tire problem? Too much power-consumption or rolling resistance? Not enough traction? Cushioning or flotation? Or is it cutting, tread chipping or oil damage? No matter what it is, there's an industrial tire designed to solve it, one that may give you up to *twice as much service* as any other tire.

To help you specify this tire, B. F. Goodrich has developed the Tire and Wheel Analysis Plan. Without obligation, a trained BFG man will study your materials handling operations. He'll recommend the right type tires for you to use—solid, semi-pneumatic or pneumatic. He'll tell you what tread design is best—smooth, directional, non-directional—and if a special tread compound should be used.

Follow the TW Analysis man's advice and you can save as much as 50% on industrial tire costs. And his maintenance tips can cut your bills up to 20%. His advice is impartial, for B. F. Goodrich makes, and BFG retailers sell, a complete line of industrial tires.

To find out more about this free B. F. Goodrich Tire and Wheel Analysis Plan, mail the coupon or call your BFG retailer. A special TW Analysis Plan is available for manufacturers of industrial handling equipment.

Specify B. F. Goodrich tires when ordering new equipment

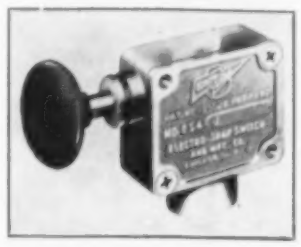
The B. F. Goodrich Co.
Department TW-97, Akron 18, Ohio.
Please send me:
☐ *Additional information* on your new Tire and Wheel Analysis Plan
☐ A free copy of your "Industrial Tire Guidebook".
Name _____
Company _____
City _____ Zone ____ State ____

B.F.Goodrich

If you write maker identify as IEN - 7064

SWITCH . . Sensitive snap acting, plunger operated for control circuit

Source: ELECTRO-SNAP SWITCH & MFG. CO.
4220-28 W. Lake St., Chicago 24, Ill.



10 amp., 110-volt ac.

Type ES4-J is new design with a plastic button attached to the plunger in the line of sensitive switches, previously described IEN-1549-51. Assembly is in a die cast housing. Clearance dimensions, including the knob and conduit connection, are 3⅜ by 2⅝ by 1¾ inches. Constant or momentary contact action can be specified. The former completes a circuit when the plunger is depressed and opens it when the depressing force is removed. The momentary contact unit closes the circuit momentarily and then opens it for the balance of the forward movement of the plunger. The switch is not tripped as the plunger returns to its original extended position. The contacts are single-pole double-throw design.

If you write maker identify as IEN - 7065

CLEANING . . Medicated soap eliminates bacteria from workers' skin

Source: GERSON-STEWART CORP.
353 Lisbon Road, Cleveland 4, Ohio

Remains stable in storage

Softasilk with Actamer is a new "personal" soap combining refined and distilled vegetable oils containing glycerine, with 2 per cent of Monsanto Actamer, a buffer that preserves the neutral low pH of the soap. This buffer absorbs alkalis released as the soap hydrolyzes in water.

If you write maker identify as IEN - 7066

BEARING . . Miniature ball unit, flanged design for instrument use

Source: NEW HAMPSHIRE BALL BEARINGS INC.
Grove St.-B, Peterborough, N. H.

Shown full size

Stainless or SAE-52100 steel can be specified in the construction of this new Micro-FR188 bearing. The outer race is straight, not tapered, to the recess next to its integral flange. The balls are positioned by a pressed metal cage. There is no excess metal in the design. Dimensions are precise to ABEC Class 5 or higher.

If you write maker identify as IEN - 7067

CONTROL . . Multiple turn dial for position adjusting and indicating

Source: GEORGE W. BORG CORP.
118-22 S. Main St., Janesville, Wis.

Easily mounted

New Microdial, Model 746-B, provides an overall range of ten turns. It can be friction locked, at any point in the range, by turning a knob. Two concentric dials count turns and increments in hundredths. The design eliminates backlash in operation.

If you write maker identify as IEN - 7068

SOLDERING . . Attachment tips assemble on liquid petroleum torch

Source: OTTO BERNZ CO.
278-82 Lyell Ave., Rochester 6, N. Y.

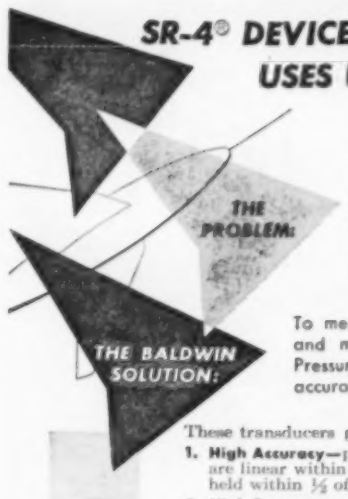
To 2,300 deg. F.

Two sizes are available in a new attachment tip for assembly on the Bernz-O-Matic liquid petroleum torch. List prices are $1.75 and $1.95 each. A tip can be applied and the torch prepared for operation in about a minute. The unit can be operated for soldering in any position. When it is not in use, it stands on its own base.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7069

SR-4® DEVICES IN INDUSTRY... USES UNLIMITED



In the static testing of rocket fuel systems, Aberdeen Proving Ground needed a transducer which could respond to the high pressures and frequencies encountered.

To meet this need, Baldwin designed and manufactured 100 special SR-4 Pressure Cells with the necessary high accuracy and high frequency response.

These transducers give Aberdeen these advantages:

1. **High Accuracy**—pressure versus voltage outputs are linear within ¼ of 1% and calibration (span) is held within ½ of 1%.
2. **High Pressures**—capacities up to 20,000 psi.
3. **Limitless Frequency Response**—attached piping or vessel reaches its frequency response limit before the pressure cell reaches its limit.
4. **Versatility**—these SR-4 Pressure Cells are all interchangeable so that they may work into the same instruments. They also work easily into an oscilloscope and can be used to operate a potentiometer.

The uses for Baldwin SR-4 devices in industry are *unlimited* . . . measuring load, pressure or torque more accurately and economically. Wide range of standard capacities. Please write Dept. 3213.

20,000 p.s.i. high frequency pressure cell. Length 5½", diameter 2", weight 1 lb.

TESTING HEADQUARTERS

BALDWIN-LIMA-HAMILTON
Philadelphia 42, Pa. • Offices in Principal Cities

If you write maker identify as IEN - 7070

"LIGHTING COSTS CUT IN HALF, *thanks to the* LUSTRA MAN"

(says Vick Chemical Co., Philadelphia, Pa.)

Mr. E. J. Mulvehill, Jr., Vick Chemical's Electrician reports: "Since we adopted Lustra Fluorescent and Incandescent Lamps, maintenance has been cut in half and superior lighting has brought improved plant efficiency."

It will pay you to talk over your lighting problems with your local Lustra Man. Write us and we'll have him arrange for an appointment. Lustra Corporation, Dept. P-6. 36 Washington St., Brooklyn 1, N. Y.

Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN - 7071

TO CLEAN YOUR DIE MOLDS..

Moisture, oil and foreign matter completely removed from air lines by patented one-piece separator and eliminator chamber.

Does not waste air by continuous venting. Positive, automatic, effective for paint sprays, sand blasting, etc.

R & I E EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER CO.
GREENSBURG, PENNSYLVANIA

If you write maker identify as IEN - 7072

for ECONOMY—and EFFICIENCY

GRIPCO

LOCK NUTS

SAVE... on FIRST cost

Simplified design makes possible much lower price

SAVE... on APPLICATION cost

Fast Application cuts production time—and cost

DUPLICATE THE SAVINGS OF THESE GRIPCO USERS

MAKE SIMILAR SAVINGS ON ALL GRIPCO NUTS

NEW GRIPCO "CLINCH" NUTS • GRIPCO HI-NUTS • GRIPCO PILOT-PROJECTION LOCKING WELD NUTS • GRIPCO COUNTERSINK LOCKING WELD NUTS

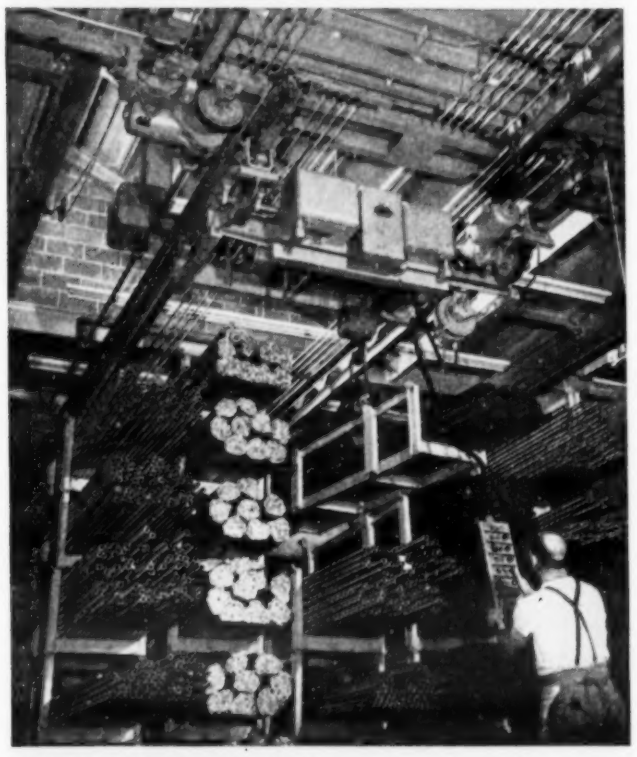
Write for samples, mentioning types and sizes of nuts you use. 256 IEN

GRIP NUT COMPANY

310-S S. MICHIGAN AVE., CHICAGO 4, ILL.

If you write maker identify as IEN - 7073

NOW UNLOAD CARS AND TRUCKS IN ONE TENTH FORMER TIME



MANPOWER hard to find? Do men and machines stand idle waiting for materials? Is the handling of heavy and slippery shapes hazardous, slow and costly? Then listen to the experience of this recent purchaser of Louden Overhead Handling equipment.

"With the Louden equipment shown in the photograph, we now unload incoming steel on railroad cars and trucks in 1/10th the time formerly required. For example, 120,000 pounds of steel bars tied in 3-ton bundles were unloaded, sparked, graded and moved into our warehouse in 1 ¾ hours. With our former handling methods, production was handicapped, inspectors could not work continuously, classifications were confused, and warehouse labor costs were excessive. Now just **one** man using the crane and hoist control shown does this entire handling job easily and safely."

WRITE FOR THIS FREE BOOK

Case histories telling how Louden Monorail Systems have saved time and money for widely different kinds of industries are described and pictured in a new, illustrated, 56-page book called, "Economical Material Handling".

THE LOUDEN MACHINERY COMPANY

7511 S. Superior Ave., Fairfield, Iowa

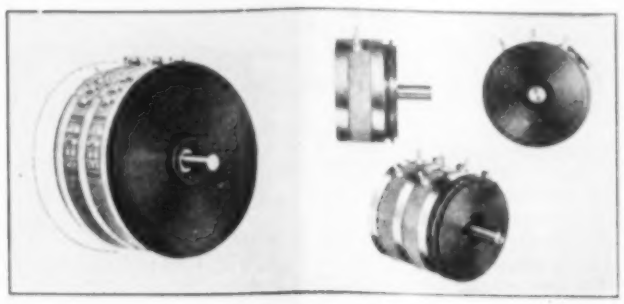
Louden

OVERHEAD MATERIAL HANDLING

If you write maker identify as IEN - 7075

CONTROL . . Potentiometers, continuous and single turn rotation

Source: HELIPOT CORP.
914-18 Meridian Ave., South Pasadena 12, Calif.



Action is stepless

Series L, to the left in the illustration, for continuous rotation and Series Y, to the right, for single turn rotation, are new additions to the company's line of precision potentiometers. Series L, rating 10,000 to 100,000 ohms, and Series Y for 50 to 50,000 ohms, are available from stock. Linearity tolerance is within 0.5 per cent.

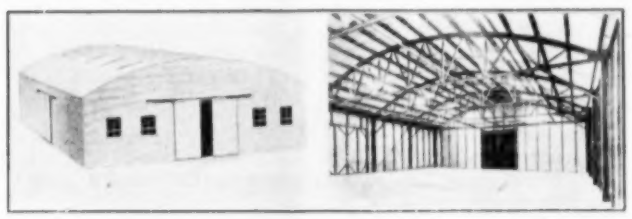
Three variations in basic design are included in the Series L which measures 3 in. in diameter. Model L is bushing mounted and equipped with sleeve bearings. Model LS is designed for servo lid mounting and carries Oilite bearings. Model LSP, also for servo lid mounting, is equipped with ball bearings. Phasing is accomplished by means of external ring clamps. Extra taps can be spot welded at the factory to a total of 33 in a single section. A maximum of eight sections can be ganged together at the factory, in the Model L, on a common shaft.

Model Y measures 1¾ in. in diameter and is available in five designs including two types of servo mounts with either sleeve or ball bearings. This unit can be furnished with a maximum of 14 sections ganged on a single shaft and a maximum of 17 taps per section.

If you write maker identify as IEN - 7076

BUILDING . . Pre-fabricated steel assembles on job, 50 and 60 ft. spans

Source: GREAT LAKES STEEL CORP.
50 Tecumseh Road, Detroit 29, Mich.



Bow string trusses on 16 foot centers

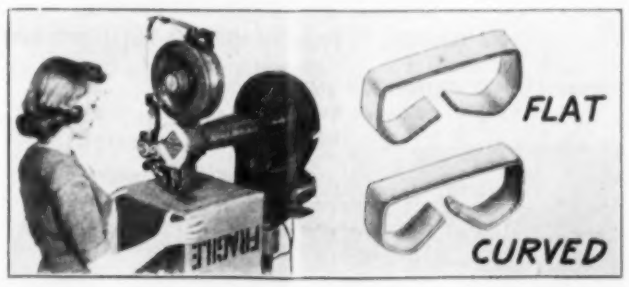
Unobstructed interior widths of 50 and 60 ft. are available now in the Stran-Steel Long-Span prefabricated building. Basic unit length starts at 48 ft. and can be ordered in greater multiples of 16 feet. Units can be joined side by side. Interior height under the trusses is 15 or 20 feet. Two models rate 20 and 30-lb. live load.

The basic structure includes framing, roof trusses, corrugated steel sheathing. Inside walls can be finished with steel similar to the outside or with other materials such as plaster, wall board. Drop ceilings can be hung from the trusses. Insulating materials, such as rockwool and Fiberglas blanket, can be nailed to the purlins. Overhead and sliding doors are to specification in 12 by 12-ft. or 14 by 13½ ft. dimensions. Walk-in doors, louvers, ventilators are available.

If you write maker identify as IEN - 7077

STAPLING . . Motor driven machine curves flat wire, forms and drives

Source: ACME STEEL CO.
2854 Archer Ave., Chicago 8, Ill.



Minimizes buckling

Column strength and stiffness in the legs of a staple are improved to a point where 0.014-in. flat steel wire can be used in place of 0.020-in. wire in the new Arcuate stitching machine. The flat wire feeds from a roll and is formed into a curved cross-section as it moves to the forming and cutting head.

The resulting staples drive true without deflecting. They pierce soft or hard materials, without difficulty, to the clincher block where the points are turned in without need to set up pressure that might cause the head to puncture the work. Due to the fact that thinner wire can be used, a coil of equal weight to the 0.020 in. material will produce 42 per cent more staples in the same size.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7078

Save time...

ENGRAVE your own NAMEPLATES

DIALS • PANELS

The fastest, easiest method for engraving individual nameplates, dials and panels.

- Automatic depth regulator.
- Engraves 15 sizes from One master alphabet.
- Equipped with self-centering device.

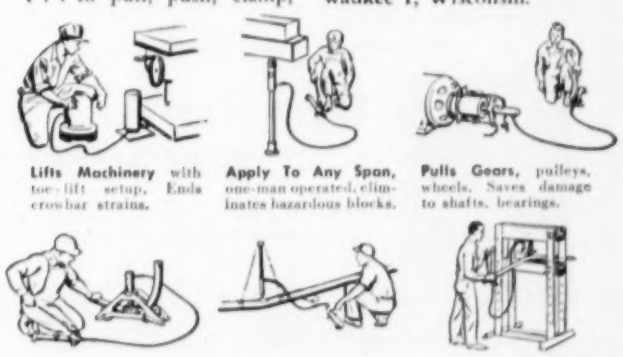
Send for Catalog IM23

NEW HERMES, Inc. 13-19 University Place, N.Y. 3
In Canada: 359 St. James St., Montreal
World's Largest Manufacturer of Portable Engraving Machines

If you write maker identify as IEN - 7079

"Porto-Power" sure helps me lick production and maintenance jobs ...1001 easy ways!

Take it from shop men who know—"Porto-Power" is the handiest time saver money can buy! It's a compact, remotely-controlled pump and hydraulic ram that combines with ingenious attachments . . . to pull, push, clamp, press, bend or spread. Available in 2, 4, 7, 10, 20, and 50-ton capacities. Hand operated or motor driven. Sold by leading distributors. Write for free catalog. Blackhawk Mfg. Co., Dept. P-1563, Milwaukee 1, Wisconsin.



Lifts Machinery with toe-lift setup. Ends crowbar strains.

Apply To Any Span, one-man operated, eliminates hazardous blocks.

Pulls Gears, pulleys, wheels. Saves damage to shafts, bearings.

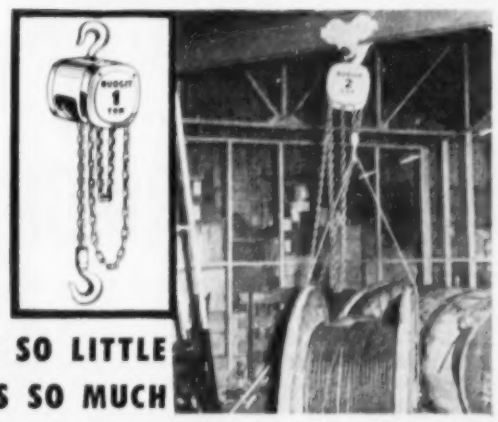
Bends Conduit, Pipe. No kinks or wrinkles. Faster installations.

Bends Rail, straightens bent parts—often without dismantling.

Free Blueprints on how to build low-cost press for "Porto-Power."

BLACKHAWK "Porto-Power" Hydraulic Jacks Hand Tools

If you write maker identify as IEN - 7080



WEIGHS SO LITTLE ...LIFTS SO MUCH

The ¼-ton 'Budgit' Aluminum Chain Block weighs only 29 lbs. It's a one-man chain block—easy to carry from one spot lifting job to another—anywhere in your plant. On maintenance jobs, loading and unloading docks, in construction work—this tough little lightweight gets mean jobs done in a hurry.

The 'Budgit' Aluminum Chain Block is available in ¼, ½, 1 and 2-ton sizes—all light, strong, completely safe to use. Easy to operate, too. The 'Budgit' gives you spur-geared efficiency. You exert a pull of only 25 lbs. on the hand chain to lift a full load with the ¼-ton size. Your "Shaw-Box" Distributor will gladly tell you the other outstanding features of the 'Budgit' Chain Block. Or, write us for Bulletin No. 398.

'Budgit'® CHAIN BLOCKS

MANNING, MAXWELL & MOORE, INC.
Muskegon, Michigan

Builders of "Shaw-Box" and 'Load Lifter' Cranes, 'Budgit' and 'Load Lifter' Hoists and other lifting specialties. Makers of 'Ashcroft' Gauges, 'Hancock' Valves, 'Consolidated' Safety and Relief Valves, 'American' Industrial Instruments, and Aircraft Products.

If you write maker identify as IEN - 7081

JOHNSON BAND SAWS

SPECIFICATIONS — MODEL J

BOTH WET AND DRY MODELS

Capacity—10" rounds, 18" flats.
Motor—½ H.P. Ball Bearing any voltage available, single or polyphase. (¾ H.P. on wet machine).
Wheel Diameters—16".
Floor Space—66" x 31".
Bed—11" wide, 44" long, 6" deep, 24" high.
Overall Height—(Closed)—39".
Blade Length—11'5" x ¾" x .032". All Standard blades of these specifications can be used.
Weight—Approximately 750 lbs. Crated 800 lbs. Boxed for export 875 lbs.
Speeds—35, 90, 130, 190 feet per minute.
Casters—Optional at slight extra cost.

MODEL B, 5" x 10" CAPACITY, ALSO AVAILABLE

WRITE FOR DETAILS

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 7082

JOY WL-80 "UNITAIR"

the Compressor of 1000 uses
81 to 640 CFM

★ A size for *every* standard motor rating
★ Air cooled . . . Two stage
★ Force-feed lubrication
★ Small floor-space requirements

Write for this FREE HELP!

New 16-page Bulletin A-56—has complete details and a Selector Chart to help you choose the right compressor for your needs.

Consult a Joy Engineer

W&D 13087

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as IEN - 7083

buy... ARMORPLY

for 3-way savings

. . . SAVES YOU TIME. Armorply is *made to your order.* You get the exact size you need to eliminate cutting and fitting on the job. You speed up production.

. . . SAVES YOU TROUBLE. Armorply is *finished to your order.* You can get a variety of surfacing metals and finishes (bonded firmly to Weldwood® Exterior Plywood). You eliminate special finishing steps. (And you get strength greater than either wood or metal alone provides.)

. . . SAVES YOU TROUBLE. Order Armorply for what you make: truck bodies, refrigerators, elevator cabs, tote boxes . . . or whatever. And see how easy it is to make better products, at lower overall costs, with better profits, simply by using Armorply. *Mail this coupon today.*

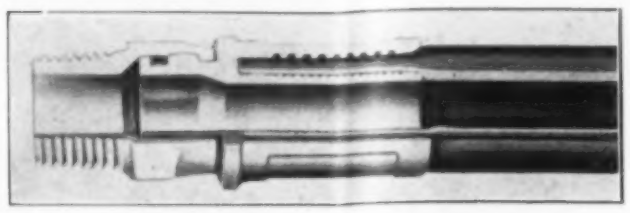
UNITED STATES PLYWOOD CORPORATION IEN-6-53
World's Largest Plywood Organization
55 West 44th Street, New York 36, N. Y.

We are interested in Armorply for _____
Please send a free sample and data.
Name _____
Address _____
City _____ State _____

If you write maker identify as IEN - 7084

HOSE . . Plastic construction with fittings for hydraulic service

Source: RESISTOFLEX CORP.
37-41 Plansoen St., Belleville 9, N. J.



Particularly for equipment use

Compar plastic tube and synthetic fiber braid carcass make up the construction of this new hose. The Compar is not subject to attack by hydraulic oils. Omission of metal from the hose carcass improves ability to absorb shock and makes the hose flexible.

Three sizes measure ¼, ⅜ and ½ in. in inside diameter. Physical pull strength is 900, 2,500 and 3,500 pounds. The hose is supplied in specified lengths, complete with fittings, for working pressures in a range between 1,800 and 2,300 pounds.

If you write maker identify as IEN - 7085

ELECTRIC CIRCUITS . . Standardized components for electronic equipment

Source: RADIO CORP. OF AMERICA
413-17 S. 5th St., Harrison, N. J.

Available to specification

Transformers, coils, traps, are representative units now available in printed circuit construction in which copper wire and wire winding are eliminated by a special photo-etching process. The possibilities for production of identical electronic circuits from a single photographic negative are limitless. The new components are intermediate frequency types designed primarily for television sets utilizing inter-carrier sound circuits and incorporating picture and sound carriers of 45.75 and 41.25 megacyles respectively.

Production of a printed circuit component begins with a photograph of the pattern of the required circuit. A contact print of the negative is made on a copperclad plastic strip that has been coated with a light-sensitive material. Following this operation the strip developed and placed in an etching solution. The unexposed parts of the copper are eaten away leaving an accurate sharply defined reproduction of the desired copper circuit. After the strip has undergone additional processing it is inserted in a metal case.

If you write maker identify as IEN - 7086

CLEANING . . Hand operated sweeper, main and side brushes, for floors

Source: HANDLING DEVICES INC.
41-45 Pearl St., Room 483, Brookline 46, Mass.

Pushes easily

Plantman trade names this hand operated floor sweeping machine on which two side brush attachments are now available. These attachments increase the normal 20-in. sweeping width to 32 inches. The side brushes gather dirt ahead of the machine and move it toward the center into the path of the main 20-in. brush. The dirt is deposited in a removable hopper with 1 cu. ft. capacity. The interior is sealed so no dust issues while the machine is in motion.

If you write maker identify as IEN - 7087

TESTING . . Liquid dye and developer to reveal flaws in plant equipment

Source: TURCO PRODUCTS INC.
6133-37 S. Central Ave., Los Angeles 1, Calif.

Finds flaw in pipe

On-the-spot inspection, for metal soundness, can be made on installed equipment by means of a new Dy-Chek kit assembly of the liquid dye and developer previously described IEN-6110-52. The kit contains a supply of cleaning material to prepare the surface surrounding the suspected flaw, the dye penetrant which is brushed on the surface after it has been cleaned and the developing fluid that is sprayed on the penetrant.

The developing fluid dries quickly to color the surface white except where a flaw does exist. At this point, a crack or opening is indicated as a brilliant red line or a porous section by bright red dots. The kit also contains three brushes, a magnifying glass, a shaker containing Turco Handisan hand soap and a set of instructions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7088

Find out NOW how to cut fire losses with triple-action WaterFOG Nozzles

These are the facts you want — all combined in one simple booklet — get the latest and most authoritative information on fire-protection nozzles. Booklet is FREE.

Lightweight Rockwood SG-48 nozzles provide *3 kinds of fire-fighting action.* You can change instantly from high velocity WaterFOG to straight stream to low velocity WaterFOG, depending on the fire you are controlling. Easy to use. Controls and puts out fires in both ordinary combustible and flammable liquids *faster — and with less water.* Operates at 50 psi at the nozzle. Write for Bulletin C-501R. Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to cut fire losses
40 Harlow Street, Worcester 5, Mass.

If you write maker identify as IEN - 7089

FABRICATED SCREENS STRAINERS

TO YOUR SPECIFICATIONS

• PRODUCTION RUNS
• HIGH QUALITY

NEWARK offers a "complete package" service in the design and manufacture of fabricated woven wire parts. We design and manufacture screens and strainers for all types of service; for handling oil, water, gasoline, air, corrosive gases or steam.

We manufacture the wire cloth, thus insuring its accuracy; we also do all the necessary cutting, forming, soldering, stamping, punching, welding and seaming. In other words, it's a NEWARK job from start to finish.

Newark Wire Cloth COMPANY
351 Verona Avenue • Newark 4, New Jersey

NEWARK ACCURACY

If you write maker identify as IEN - 7091

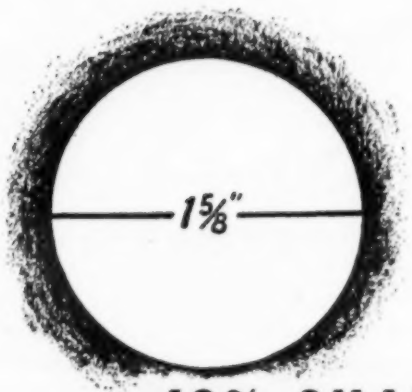
- It's a *drive-on* fastener for making quick, tight joints and repairs on conveyor belts.
- New and improved design brings edges of belt together —no gaping openings.
- Only a hammer is required to apply.
- Made of Steel, Monel, Stainless, Everdur.
- One size only No. 16—for repairing belts 3/8" to 9/16" thick—for joining belts 7/16" to 9/16" thick.

Order from your Supply House. Ask for Bulletin T-600

FLEXIBLE STEEL LACING CO.
4610 Lexington St., Chicago 44, Ill.

If you write maker identify as IEN - 7092

YOU NEED ONLY THIS SIZE SPACE FOR STERLING INDICATING METERS



40% SMALLER THAN FORMER MODELS

Typical of Sterling's ability to produce just the right meter for your needs at moderate cost is this new small unit for A-C or D-C service. Available in ranges of 1 to 50 V, 1 to 30 amp, and 10 to 1,000 milliamperes —with high readability and accuracy. In dull, black, wrinkle or nickle finishes. Write today for complete facts.

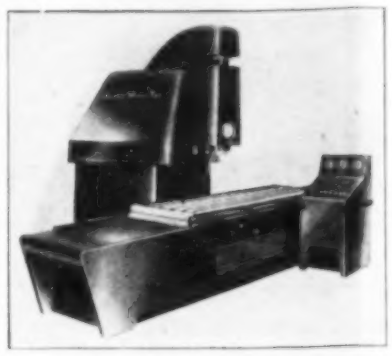
Send for a Sterling catalog today — a complete line of meters for the electronic and automotive field.

STERLING
MANUFACTURING COMPANY
7201 WENTWORTH AVENUE
CLEVELAND 2, OHIO

If you write maker identify as IEN - 7094

MILLING . . Vertical machine, tracer control, air hydraulic feeds

Source: DEWITT LEWIS CO.
3631 Sophia St., Wayne, Mich.



Made in Europe

Hydro Micro-Tel is a new vertical spindle milling machine in which the feed movements for the table and spindle are by hydraulic pressure rather than lead screw and pressure is developed by air pressure from a shop source in place of the usual motor driven hydraulic pumps. The two machine sizes mount tables with working surfaces measuring 30 by 96 in. and 30 by 126 inches. Longitudinal travel is 72 and 104 inches. Cross travel is 34 in. in both cases and vertical travel of the spindle head is 15 inches. Maximum distance from the top of the table to the spindle nose is 27 inches. The throat measures 14 inches. Table top to underside of the cross slide is 18 inches.

Feeds, in longitudinal, cross and vertical directions, are infinitely adjustable to a maximum of 50 ipm. Rapid power traverse of the table and cross slide is at 180 ipm. The spindle is driven by a 10 to 15-hp. motor with overall range from 0 to 2,400 rpm. The spindle nose measures 5 1/16 in. in diameter. It is fitted with a No. 50 NS flange nose.

Lubrication is handled automatically. A coolant tank and associated equipment can be specified. The machine can be equipped with hydraulic tracing control that is accurate to 0.001 in. and with electronic tracing or profiling control accurate to 0.0002 inch. Spindle depth control is to 0.0001 inch.

If you write maker identify as IEN - 7095

SOLDERING . . Concentrated flux for metals usually difficult to solder

Source: REMONT MFG. CO.
1310 Meyers Road, Lombard, Ill.

Free sample upon request

Tins-tyter is a new liquid flux for dilution with four parts of water to apply on metals that do not present a difficult soldering problem. It is used as supplied on difficult metals such as those that are heavily oxidized. The flux residue can be washed off with cold water. Application can be by means of soldering iron, flame or dip operation.

If you write maker identify as IEN - 7096

HANDLING . . Half-circle drum cradle rolls drum between vertical and horizontal

Source: VOL-U-METER CO.
P. O. Box 54-A, Buffalo 16, N. Y.

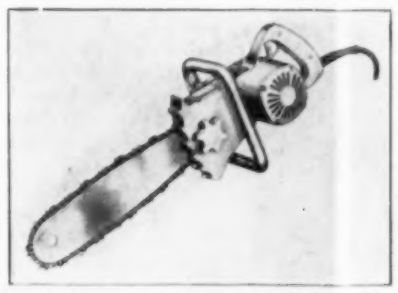
Safe to use

New cradle is up-ended, as shown in the illustration, to apply on a drum. A handle, that operates with it, is positioned between drum and cradle. Pulling on the handle rolls the drum to horizontal position where it is held by a pair of tubes forming feet on the cradle. These tubes are positioned so the drum is tipped a little to permit draining its content. One man can handle a full drum without difficulty.

If you write maker identify as IEN - 7097

WOODWORKING . . Chain saw mounts motor driven 14-in. cutter bar

Source: SKIL CORP.
5039 Elston Ave., Chicago 30, Ill.



For heavy duty

The motor on this new Model-125 saw is universal design for operation on 110 volts. It can be specified for 220 volts. The motor drives the chromium plated chipper type chain saw at 1,400 fpm. The chain is lubricated, while it is in action, by a push button oiler.

The assembly weighs 16½ pounds and is designed for one man operation. Spike teeth on each side of the cutter bar are angled upward so the saw can slide down the work easily as a cut progresses. They dig in when upward leverage is applied to the handle to securely back up the cutting action.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7098

Reduce Wear with Stock Bars of AMPCO* METAL
Grade 18, Centrifugally Cast

AMPCO METAL Grade 18 stock bars are a real convenience — you carry the sizes most generally used. Prompt delivery from our Milwaukee stock on all other sizes.

Centrifugally cast Grade 18 stock bars are carried in all sizes from 1⅛" to 3⅞" I.D., 1¾" to 6" O.D., 12½" long, rough bored and faced one end. Solid extruded bars, cut to desired lengths, are also available.

Write today for your free wall chart and a 4-page data sheet listing physical properties and recommended usages.

*Reg. U. S. Pat. Off.

AMPCO ® D-15

AMPCO METAL, INC.
DEPT. IE-6 • MILWAUKEE 46, WISCONSIN
West Coast Plant: BURBANK, CALIFORNIA

If you write maker identify as IEN - 7099

AIRCRAFT DESIGN ENGINEERS can allow for continuously changing power and performance requirements through the complete *interchangeability* (on the same mounting base) of this new line of Guardian Aircraft Relays. Standard spacing of mounting bracket holes provides extreme flexibility. **It's the way to meet new control specifications without changes in frame drawings!** Units range from single pole, single throw (time delay available) to four pole, double throw contact combinations, with ratings from 10 amperes to 50 amperes at 28 v., D.C. All sealed in accordance with MIL-R-6106. Weights: from 7.5 ounces to 20.8 ounces. Write for Bulletin 1 AR.

100 Ampere Solenoid Contactor

NOTE THE PRECISE ALIGNMENT OF MOUNTING HOLES!

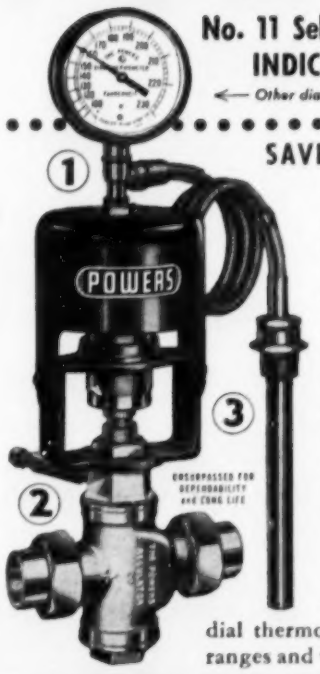
Specify from Guardian's complete range for every advantage of quick interchange!

GUARDIAN ELECTRIC
1620-G W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as IEN - 7100

POWERS

No. 11 Self-Acting TEMPERATURE INDICATING REGULATOR
← Other dials available



SAVES LABOR—Stops Losses caused by over-heating

Automatically controls temperature of liquids or air at any point desired. Needs no compressed air or electricity for its operation.

3 Plus Values give you more for your money: 1) Easy to read 4" dial thermometer shows temperature of liquid or air being controlled, makes it easy to adjust regulator for proper temperature. 2) Has valve stem lubricator. 3) OVER-heat protection.

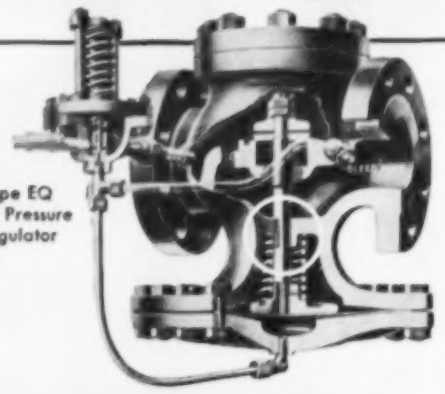
Powers No. 11 Regulators are available also without dial thermometer in a variety of 60° F. ranges and valve bodies ¼" thru 8". (110)

ECONOMICAL • DEPENDABLE • SIMPLE • EASY TO INSTALL

WRITE FOR BULLETIN 329 **• THE POWERS REGULATOR CO.**
3437 Oakton Street, Skokie, Illinois • Offices in over 50 Cities

If you write maker identify as **IEN - 7101**

another SPENCE *design feature*



Type EQ Back Pressure Regulator

No Stuffing Boxes..

In Spence regulators all main valves and most pilots are built without stuffing boxes. This packless construction is made possible by the use of a large balanced metal diaphragm which eliminates the need for closely fitted parts. Result? More accurate regulation. • Valve stem wear is also reduced in the Spence packless design. Result? Low maintenance, years of trouble-free service • Write for Bulletin 500 giving full details of complete Spence line of automatic regulating valves.

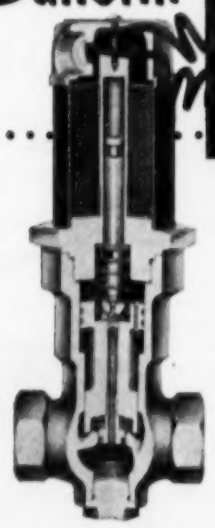
SE-125

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as **IEN - 7102**

free Bulletin

Atkomatic
SOLENOID
ELECTRIC VALVES



- Designed for Automatic or Remote Control for operating pressures up to 3,000 psi.
- Full-ported, packless, sturdy, dependable, tight closing.
- Adjustable timing on closing stroke to 300 psi. Eliminates shock on supply lines.
- Handles all media not harmful to bronze. Explosion-proof coil housings available for use in hazardous atmospheres.
- Easily maintained, all parts accessible without removing valve from line.

Write for more complete information

Atkomatic
SOLENOID
ELECTRIC VALVES

ATKOMATIC VALVE COMPANY
545-A ABBOTT STREET • INDIANAPOLIS 25, INDIANA

If you write maker identify as **IEN - 7103**

TO CUT YOUR KEYWAYS IN ONE MINUTE FOR ONE CENT

CUT THIS COUPON
and get complete specs and prices on du MONT *Minute Man*®
KEYWAY BROACHES and KITS

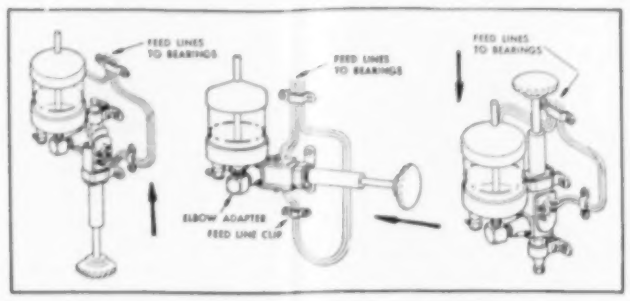
The du MONT CORPORATION, Greenfield, Mass.
MAIL ME FREE CATALOG and PRICE LIST N.

Name.....
Company.....
Address.....

If you write maker identify as **IEN - 7104**

LUBRICATING . . Equipment kit, user installs, serves 5 to 12 bearings

Source: LINCOLN ENGINEERING CO.
5732 Natural Bridge Ave., St. Louis 20, Mo.



Illustrated data in Bulletin 805

Multi-Luber is a new kit assembly of hand operated pump and reservoir, available for oil or light grease, with lines and fittings to serve 5 to 12 bearings on a machine. The equipment is particularly suited for punch press application. Optional flexible feed lines and swivels are available to connect to bearings that move. The company supplies installation instructions with each kit. List price is about $30.

If you write maker identify as **IEN - 7105**

GRINDING . . Flexible shaft machine, truck mounted for portable application

Source: FRANKLIN BALMER CORP.
Clipper Road, Woodberry, Baltimore 11, Md.

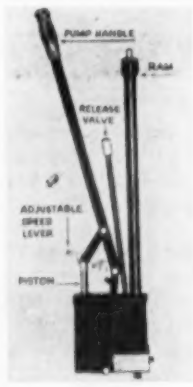
Strandflex HH-380

New assembly of flexible shaft machine and ball bearing rubber tired truck applies the machine in a trunnion mounting. It swivels on the truck platform and includes a bracket to carry the hand piece on the truck handle. An operator can push or pull the unit from place to place. He returns the truck to standing position to provide stable support for the driving motor at a point of use. A metal box provides carrying space for tools and attachments. An extension cord is included.

If you write maker identify as **IEN - 7106**

TRUCK . . Hand hydraulic pump for company's two wheel lift truck

Source: ALLIED MFG. & SALES CO.
203 N. Wells St., Chicago 6, Ill.



Interchangeable

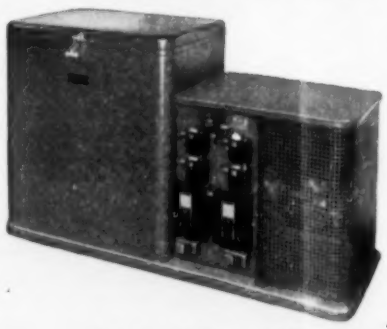
Lifting rate can be varied between 1¼ and 5 in. per stroke of the new four-speed hand pump with which the company is now prepared to equip its two wheel hand hydraulic lift truck, previously described IEN-5007-51. The low rate per stroke can be employed for 500-lb. capacity loads, the 5-in. stroke when the load platform is empty.

The truck rides on aluminum wheels fitted with molded rubber tires. Its frame is made of structural steel in welded assembly. Lift is to 54 inches. Shop Caddy is its name.

If you write maker identify as **IEN - 7107**

REFRIGERATING . . Sub-zero machine to shrink, stabilize, test and store

Source: SUB-ZERO PRODUCTS CO.
3930 Reading Road, Cincinnati 29, Ohio



Ask for Bulletin 102

Model T-120 is a new machine in the company's line of chilling equipment. It will carry temperatures down to 140 deg. below zero F. Thermal capacity is 1,200 btu. per hr. at minus 120 deg. F. This is sufficient to chill 50 lb. of steel per hour from plus 80 to minus 120 deg. F. Chamber capacity is 7½ cu. ft.

Assembly is in a steel cabinet measuring 72 by 27½ by 45 inches. The refrigerating equipment is driven by ½ and ¾ hp. motors. Temperature can be controlled from minus 70 to minus 140 deg. F. to meet a range of requirements.

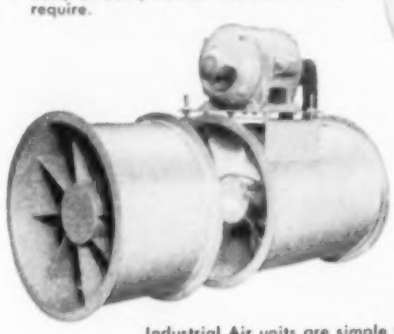
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7108**

AIR!

TUBEAXIAL FAN

Designed especially for the critical and toughest ventilation or exhaust problem. May be connected to inlet or outlet duct, or both, as the installation may require.



VANEAXIAL FAN

Illustration shows installation of vanes on the discharge side of propeller. Waste energy is converted to useful work. The guide vanes straighten out the air stream, assuring a true axial flow of air.

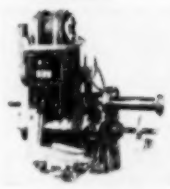
Industrial Air units are simple to install and maintain. Bearings and drive are completely protected from the exhaust air and can be replaced or serviced without removing the unit from the system. Available to your job needs and specifications, either direct or belt driven units, sizes from 12" to 48", motors from ⅛ H.P. to 50 H.P. Static pressure up to 4", 1,000 to 65,000 C.F.M.

Represented in all principal cities — *Write Dept. 200 for complete catalog*

THE HARVEY P. BERTRAM CO.
561-565 READING ROAD - CINCINNATI 2, OHIO

If you write maker identify as **IEN - 7109**

Sure! **Turner can furnish ordinary 3 or 4 speed transmissions — BUT . . . Turner can ALSO furnish 6 or 9 speeds for AS LITTLE AS $10 to $20 ADDITIONAL . . .**



Now, for slight added cost you can have 6 or 9 speeds at the "twist of a wrist." Models range from fractional to 60 H.P. Wide range of applications on machine tools as well as other equipment. Write for specification and descriptive catalog.

See your dealer or write for further details

TURNER 3R3 UNI-REDUCER
New, simplified speed reducer mounts on motor shaft with d torque arm to frame or base. Fits standard motors 1 to 5 H.P., 1800 RPM; 1 to 3 H.P., 1200 RPM. Reduction ratio 3.04 to 1. Write for information.

TURNER UNI-DRIVE Company
3479 Terrace Street Kansas City 8, Missouri

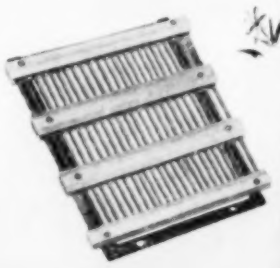
If you write maker identify as **IEN - 7110**

Yes! They Are Related!

Much of the better-grade rubber garden hose used today is made by a process employing equipment heated by

"FOLDED-and-FORMED" Heating Elements

This is typical of the extremely wide range of applications in which these TRENT patented electric heating elements are proving their unequalled efficiency and economy. Made in Standard or Custombuilt Racks, to provide any required K. W.



What is YOUR heating problem? It will pay you to get the complete "Folded-and-Formed" story.

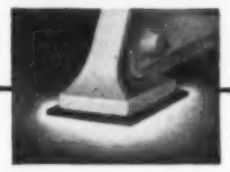
TRENT INC.
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA. 27, PA.

If you write maker identify as IEN-7111

One standard package of ISOMODE* PADS gives you

vibration control for 80 tons of machines

...INCLUDING PRESSES



It pays to keep a standard package of ten Isomode Pads in stock. Costs less that way—and then you always have it on the spot for installing machinery—up to 80 tons of it. Supporting up to 50 lbs/sq. in., Isomode Pads really make a difference in plant operations. Here's how: (1) No need to bolt to any type of floor. Machines stay put. (2) Isomode Pads help reduce noise level, increase comfort. (3) Less disturbance to offices or adjacent equipment. (4) Less damage to building, less strain on machines, less maintenance. Write for data.

*Trade Mark Reg. U.S. Pat. Off.

THE MB MANUFACTURING COMPANY, INC.
1064 State St., New Haven 11, Conn.

If you write maker identify as IEN-7112

Phillips INDUSTRIAL TRAILERS

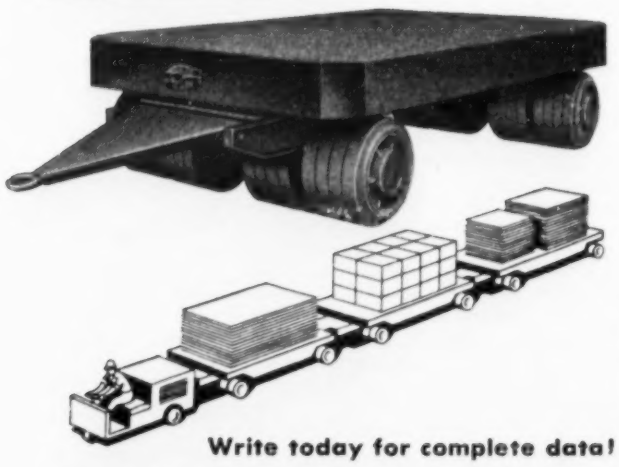
✓ FOR HAULING ALL KINDS OF INDUSTRIAL PRODUCTS—MATERIALS

✓ MADE IN SIZES AND CAPACITIES TO MEET YOUR NEED

✓ FEATURE TIMKEN BEARINGS
PNEUMATIC OR SOLID TIRES
ALL STEEL WELDED CONSTRUCTION

MODEL TF-60
6000 lb. Capacity

MODEL TD-1200
120,000 lb. Capacity



Write today for complete data!

Phillips Industrial Trailers simplify hauling of heavy loads in and around industrial plants . . . with substantial savings in time, effort, and money. Ruggedly built to withstand long, hard usage, these trailers are available in cap cities from 6,000 to 120,000 pounds. Easily maneuverable — they can be used singly or in tandem, for every industrial hauling requirement.

MANUFACTURERS SINCE 1863 PHILLIPS MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

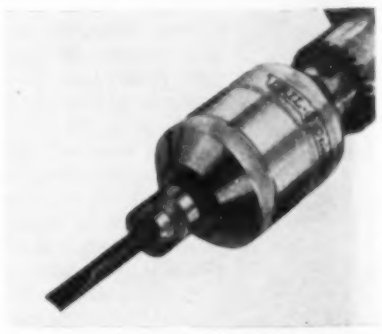
MATERIALS HANDLING EQUIPMENT

2500 JANE STREET • PITTSBURGH 3, PA.

If you write maker identify as IEN-7114

SCREWDRIVING . . Cone clutch head for portable tool, drives screws, nuts

Source: DRILO CORP.
203 E. Carson St., Pittsburgh 19, Pa.



Produces impact action

Dril-O-Driver is a new attachment head to mount in the chuck on a portable electric or pneumatic tool. The attachment adds a cone type clutch to the tool spindle. It rides normally in released position. The attachment nose can be fitted with any of a number of ¼-in. screwdriver bits or socket drives for screw and nut assembly.

Drive starts and is continued as long as the operator maintains pressure on the portable tool to engage the clutch. The amount of pressure determines the strength of the drive. Screws and nuts can be removed as well as driven when the tool is equipped with a reversing control. The attachment head, with a ¼-in. screw-drive bit and a ¼-in. drive adaptor, lists at about $10. ready for use.

If you write maker identify as IEN-7115

WELDING . . Anti-spatter liquid to coat areas around arc weld seam

Source: THOMPSON & CO.
1083-87 Allegheny Ave., Oakmont, Pa.

Minimizes clean up

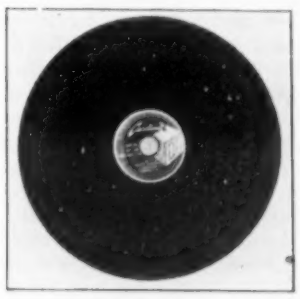
Anti-Spatter is a new liquid for brush, spray or wipe application over metal surfaces where arc welding is liable to drop metal spatter. The spatter will not adhere to the coated surface and can be wiped off easily. The coating does not result in glare. It is free from disagreeable odor. It does not interfere with the welding operation. Packaging is in quarts, gallons, 5-gal. containers and 55-gal. drums.

Two types include No-Clean and Pickle-Off. The former does not require removal before priming and provides a good foundation for paint. The latter is employed when the finished work is to be pickled and also on chromium and stainless steel where ease of removal is a desirable feature.

If you write maker identify as IEN-7116

CUTTING . . Abrasive disc for concrete, brick, tile, stone

Source: CARDINAL ENGINEERING CORP.
1001 Diamond St., Philadelphia 22, Pa.



Available for test

Non-Brak trade names a new reinforced circular abrasive blade that will not break easily if it binds in a cut, particularly in the softer varieties of masonry. The blade is balanced and supplied with a metal center insert and pre-attached blotters on the two faces.

Sizes range from 6 to 14 inches. Thickness is ⅛ to ¼ inch. Size of the center hole can be specified. A 12 by ⅛-in. blade lists at $6.44 in lots of 1 to 9. The list is $3.81 in lots of 250 or more. A 6 by ⅛-in. blade ranges from $1.76 to $105 in the same quantities.

If you write maker identify as IEN-7117

TRUCK . . Power lift fork design for stable operation on high lifts

Source: LEWIS-SHEPARD PRODUCTS INC.
190 Walnut St., Dept. R-18, Watertown 72, Mass.

Rates 1½ ton

The drive assembly of this new Model-M Spacemaster, particularly for high lift duty, is independent of the load carrying section and is connected to it by flexible parallel links. The load section employs four wheels under its base outriggers, two of them in rigid caster assemblies on the sides of the frame. The arrangement provides safe stable support under a load high in the air.

Outer and inner masts, are made of alloy steel, formed and cross braced. The outer mast uprights are welded at the bottom to a 5 by 2-in. bar. They are joined at intervals by tubes, also welded in place for a rigid assembly.

The illustration shows application of the new truck in handling a pallet load with the masts extended to stack the pallet into an overhead rack.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7118

Want Temperature Controls That Save Money, Increase Performance:

USE

KLIXON Thermo-Snap CONTROLS

Actuated by the scientifically calibrated thermostatic disc, Klixon disc-operated controls "snap" the circuit open with a quick, clean break — and "snap" it closed again to a solid make no matter how often they operate. Because Spencer Controls have no complicated relays, toggles, magnets or other fussy parts, their accurate performance is unaffected by shock, vibration, motion or altitude regardless of the position of mounting.

What's your temperature control problem ...low and high limit controls, fuel delay switches, tube and rectifier cooling, fan switches, temperature control . . . Klixon Thermo-Snap Controls are meeting the requirements for these and other applications daily.

Klixon Thermo-Snap Controls are available in many hermetically sealed and open types in a wide variety of operating temperature ranges.

Write for their help or further information.

KLIXON
SPENCER THERMOSTAT
Division of Metals & Controls Corp.
206 FOREST STREET, ATTLEBORO, MASS.

If you write maker identify as IEN-7119

Now... A 3-Way Versatile Drawing Material!

For drawing, lithographic printing, and exacting photographic reproduction use translucent VINYLITE Plastic Rigid Sheet with a grained surface. It can show the sharpest detail—or the softest shading. The drawing surface can produce various tints and tones by use of litho crayons and pencils. It can be multicolor printed. It can serve as a negative for photographic prints, where accurate color register is essential. With grid lines and title blocks printed to show through from the *reverse side* of the sheet, drawings are quickly and easily made. Most important, they'll *stay* accurate, for VINYLITE Plastic Sheets won't shrink or stretch! Erasures are quick and clean—ink can be scratched off with a razor blade or removed with special liquid cleansers. Drawings can be removed, and sheets used again and again.

Stiff and crisp, VINYLITE Plastic Rigid Sheets lie flat—yet are pliable enough to roll up. They resist wrinkling, cracking, fraying, aging. They're easily cleaned—finger marks and smudges wipe off with a damp cloth. They resist water, grease, perspiration, chemicals, most acids and alkalies. VINYLITE Rigid Sheets are made in many sizes, several thicknesses. Other uses in industry are: charts, templates, calculators, precision drafting instruments and maps. Find out what this versatile material can do for *your* business. Write Dept. QV-3.

Data courtesy N. Teitelbaum Sons, New York 51, N. Y.

Vinylite BRAND
PLASTIC RIGID SHEET

TRADE MARK

BAKELITE COMPANY
A Division of
Union Carbide and Carbon Corporation
UCC
30 East 42nd St., New York 17, N. Y.

If you write maker identify as IEN-7121

Goes further!

- No waste
- Lasting "Tack"
- Full measure
- Stays Fresh
- Best buy for plant supply

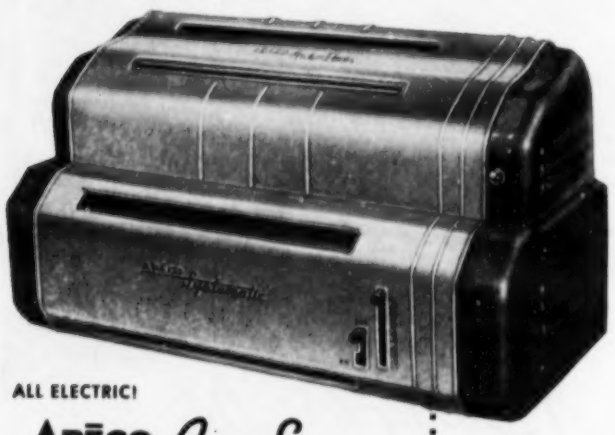
In single rolls, or 10-roll cartons — each roll wrapped in cellophane Jenkins Bros., (Rubber Div.), 100 Park Avenue, New York 17.

JENKINS Gold Seal Tape
FRICTION...RUBBER

MADE BY JENKINS BROS . . . MAKERS OF FAMOUS JENKINS VALVES

If you write maker identify as IEN-7122

DRY PHOTOCOPIES AUTOMATICALLY!



ALL ELECTRIC!

APECO Systematic Auto-Stat

ONE UNIT DOES IT ALL!

Makes photo-exact copies direct from original letters, forms, bids, contracts, invoices, catalog sheets, reports, blueprints.

Yes—now a dry photocopy from any original in less than 45 seconds without any additional equipment. The Apeco Systematic Auto-Stat prints, processes and dries automatically . . . copies are ready for instant use. It saves up to 80% on copying jobs. Eliminates costly re-typing, hand copying, checking or expensive outside copying service. It's fast—only 2 steps will make legally accepted prints from any original up to 11 x 17 inches—printed on one or two sides.

SO LOW COST

A complete Apeco Systematic Auto-Stat installation is priced well within the budget of even the smallest firms. Remarkably low operation cost, too!

MAIL TODAY!

HAVE YOU READ THIS NEW FREE BOOK?

American Photocopy Equipment Co.
Dept. IEN-63
2849 North Clark Street, Chicago 14, Ill.

Please rush me, without obligation, your factual report on office copying. I understand this free booklet pictures and tells the complete Auto-Stat story and shows how I can use Apeco Auto-Stat in my office.

Name_____
Firm_____
Address_____
City_____ Zone____ State____

Offices in All Principal Cities

Manufactured in the U.S.A. by
AMERICAN PHOTOCOPY EQUIPMENT CO. 2849 N. CLARK STREET CHICAGO 14, ILLINOIS

If you write maker identify as IEN-7124

HANDLING . . Tramrail carrier moves load beyond the end of a crane

Source: CLEVELAND CRANE & ENGINEERING CO.
1137 E. 283rd St., Wickliffe, Ohio

For transfer duty

New Tramrail carrier mounts an electric hoist and rides beneath a traveling crane. It can be rolled to the end of the crane bridge where it extends beyond the end to pick up or put down a load beyond the normal range of the crane. Reach beyond the bridge end is 25½ inches. Load capacity of the carrier is 1,500 pounds.

The crane can be moved along its runway without interference between the carrier and the building columns by retracting the carrier on the crane bridge.

If you write maker identify as IEN-7125

GENERATOR . . Engine driven ac., 1 kw., for standby and utility duty

Source: KOHLER CO.
1230 High St., Kohler, Wis.

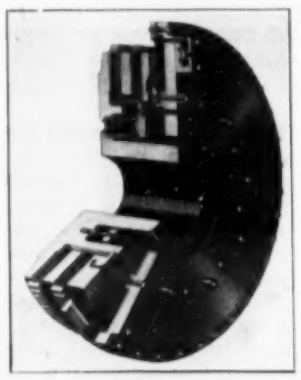
Rates 1,000 watts

Model 1A21 is the first of a new series of engine-driven generators for automatic standby duty on an electric circuit or for portable service. It provides 110-volt ac. for lighting and power tools. The automatic design will start when a 40-watt or larger lamp is switched on the circuit. It stops when there is no demand for current. A second design starts upon depressing a pushbutton.

If you write maker identify as IEN-7126

DRIVE . . Air actuated clutch, multiple disc design, 24 in. diameter

Source: TWIN DISC CLUTCH CO.
1401 Racine St., Racine, Wis.



Air cooled diaphragm

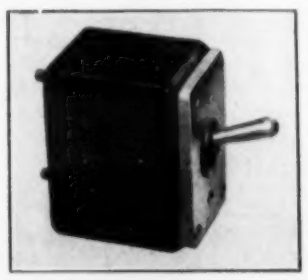
Compressed air is admitted and released through a valve equipped side fitting in this new Model-PO air actuated clutch. It represents further development of the Model P, previously described IEN-4821-45. It is lighter in weight, narrower in width and provides greater torque capacity than the previous design, size for size of new against previous.

Toothed discs on the output side are gripped and released by the air pressure which acts upon an angular diaphragm. Springs oppose the diaphragm movement to free the driving discs as soon as the air pressure is released. The clutch is available at present in two and three-plate assemblies measuring 24 in. in pitch diameter.

If you write maker identify as IEN-7127

SWITCH . . Toggle design, water proof, 175 amp., on 110 volt ac.

Source: RIVERSIDE MFG. & ELECTRICAL SUPPLY CO.
10226-30 Michigan Ave., Dearborn, Mich.



Nothing can enter

The mechanism in this new single-pole single-throw toggle switch is enclosed in a rubber compound. A rubber boot provides a water proof seal around the toggle and between the mounting plate and the switch itself. Overall dimensions are 2¼ by 2⅝ by 3½ inches. The toggle extends about 1½ in. beyond the mounting plate, at the top of its travel. Assembly weight is about 1½ pounds.

The switch is rated for continuous duty at 175' amp. on 110-volt ac. with maximum inrush capacity, on any type of load, at 500 amperes. Gang assemblies can be made by using a connecting bar between two toggles to operate them as a single unit. In this case the "double" switch will handle 300 amperes. Single units can be wired in multiple as double-pole single-throw assemblies.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7128

Lindberg Air or Hydraulic Cylinders provide dependable, low cost power for lifting, forcing, pulling, pressing, pushing and clamping. Ask for bulletin No. 701, "Lindberg Hydraulic Cylinders" . . or No. 731, "Lindberg Air Cylinders."

LINDBERG CYLINDERS AIR HYDRAULIC

Lindberg Engineering Company, 2481 West Hubbard Street, Chicago 12, Ill.

If you write maker identify as IEN-7129

NO STICKING
NO JAMMING
NO FREEZING

cochrane MULTIPORT VALVES

In vapor systems where pressure relief to atmosphere is a must for safety—maximum savings important, Cochrane Multiport Pressure Relief Valves are the answer.

Safer—multiple "vapor cushioned" valve discs instead of one ordinary valve disc insure discharge upon overpressure without freezing, sticking or jamming.

Economical—they discharge only unusable steam. Usable steam is conserved at all times, even during discharge. They require a minimum of maintenance—no maintenance in most cases.

Efficient—no stuffing boxes are used on operating parts hence no friction retards responsiveness.

Free from hammer—they close without "blowdown"—never slam shut to cause hammering or vibration in the line.

Easily adjusted to desired pressure—simply turning the valve handwheel or chainwheel obtains any desired pressure setting in the range zero to maximum. You are able to change quickly to any new back pressure you desire to carry.

Simple, positive operation—when pressure rises above set pressure the vapor cushioned valve discs e-a-s-e open metering off only unusable vapor, then close gently. Abrupt changes are eliminated, equipment always protected.

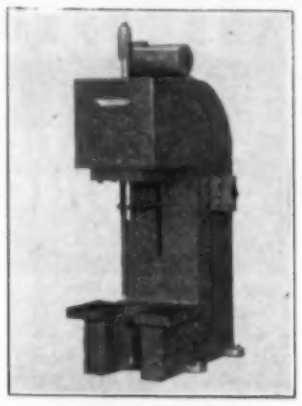
Write for more facts on how Cochrane Multiport Valves save steam, cut maintenance, provide complete protection in your plant.

cochrane corporation
3152 N. 17th Street, Philadelphia 32, Pa.

If you write maker identify as **IEN - 7131**

AIR-HYDRAULIC PRESS

Two models deliver 2½ and 5½ ton from a 100-lb. shop air line



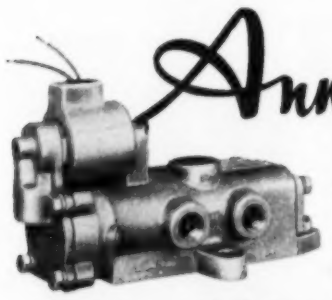
This press provides controllable hydraulic action for forming, flanging, marking, riveting, broaching, crimping, staking. It operates under effortless valve or pushbutton control. Stroke length is a little over 5 and 6 inches. Adjustment is through 2 inches. Throat is 6¼ inches. Base measures 9½ by 18 inches and 11 by 21 inches.

Multiplies pressure 50 and 110 times

1953 Catalog on request

AIR-HYDRAULICS INC.
809-13 Belden St. Jackson, Mich.

If you write maker identify as **IEN - 7132**



Announcing

The New "Super-Duty" 4 Way Poppet Type

High Speed Solenoid Valve

Produced by ASCO *Headquarters for Solenoid Valves and Electromagnetic Controls*

TYPE 4 Way Valve, Screwed Pipe Connections or Manifold Mounting. Available for 5 ported operation and regulated flow control.

USE Controlling Ultra High Speed Double Acting Pneumatic or Hydraulic Cylinders.

Operating Speed with Air, 500 Cycles/Minute Continuous; 750 Cycles/Minute Intermittent.

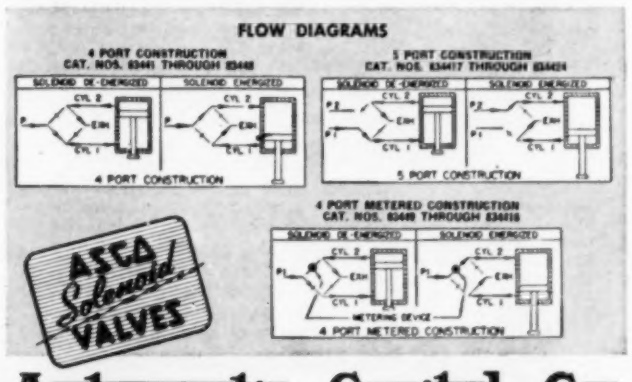
Design Features

- **Instantaneous Action.**
- **Poppets on Common Shaft operated by line pressure inherently provide simultaneous valve action and tight seating.**
- **Differential Piston provides power operation in both directions. Eliminates all danger from sticking.**
- **Short Strokes; Guided Inserted Seats; Minimum Wear.**
- **Packless Construction—No Stuffing Boxes or Sliding Glands.**

This ASCO Super-Duty High Speed 4 Way Poppet Type Solenoid Valve — Bulletin 8344 — has been subjected to exhaustive tests at high speed for millions of cycles. The standard solenoid is suitable for NEMA Type IV Watertight and for Underwriter's Class 1, Group D. Explosion Proof (NEMA Type VII) requirements. It's exceptionally compact in all four sizes: ⅜, ½, ¾ and 1 inch. Standard units are designed to handle pressures up to 250 psi. Detailed literature is available.

This particular ASCO Solenoid Valve may be just what you are looking for as the control for your equipment's 'high speed' operations. If not, write us about your control problem anyway because we have many other valves from which to select.

We manufacture a complete line of standard and specialized Electromagnetic Controls. These include Automatic Transfer Switches, Remote Control Switches, Contactors, Relays, and complete Control Panels.

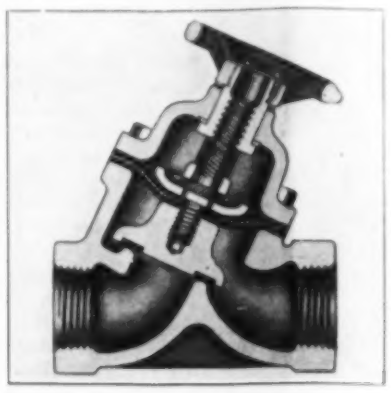


Automatic Switch Co.
383 LAKESIDE AVENUE, ORANGE, NEW JERSEY

If you write maker identify as **IEN - 7134**

VALVE . . Packless diaphragm seals separate disc, ½ to 6 inches

Source: CRANE CO.
834-38 S. Michigan Ave., Chicago 5, Ill.



Interchangeable parts

New body, diaphragm and lining materials have been added to the Crane line of packless diaphragm valves. They are now regularly available with aluminum, brass, cast iron, and 18-8 Mo bodies and disc holders with diaphragms and disc inserts made of neoprene, Buna-N, or soft natural rubber. Natural hard rubber or neoprene can be specified for the lined design. Special designs are available for vacuum duty and to handle oxygen and acetylene.

Sizes range from ½ to 2 in. with threaded ends, ½ to 6 in. with flanged ends in plain or lined construction. Sizes above 2 in. have the same face to face dimensions as standard 125-lb. cast iron globe valves to permit replacement without having to alter installed piping. Sizes from ½ to 4 in. rate 150 lb. water to 180 deg. F. depending on the service. The 6-in. size rates 125 pounds.

The diaphragm seals the interior of the valve from the operating stem but does not perform any flow-sealing function. The disc rides down on a seat to stop the flow. The valve can be closed to prevent loss of fluid even though the diaphragm breaks in service.

If you write maker identify as **IEN - 7135**

CLEANING . . Powdered material for use on rubber, linoleum, paint

Source: AMERICAN MAT CORP.
1711 Adams St., Toledo 2, Ohio

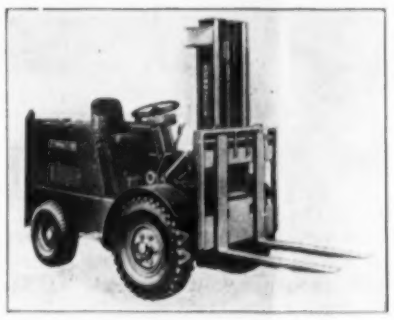
Available in 5 pound packages

Amateo trade names a new material particularly to clean the surfaces of rubber mats. It can be used also on linoleum, asphalt tile, terrazzo, painted surfaces, wood floors. The powder dissovles in water. It will not attack rubber while it is removing organic oils and greases. It is not caustic and will not discolor rubber.

If you write maker identify as **IEN - 7136**

TRUCKS . . Diesel driven fork lift with ratings from 2 to 3½ ton

Source: TOWMOTOR CORP.
1224-28 E. 152nd St., Cleveland 10, Ohio



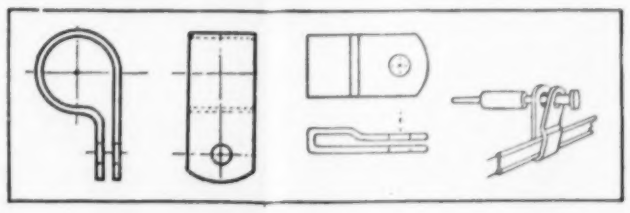
Details on request

The company announces availability of its engine driven fork lift trucks with diesel engines, when they are specified in place of the previous gasoline engine. The trucks are Models 460-D, 480-PD, LT-56-D, LT-60-D and LT-62-D. Operation is characterized by clean exhaust, practical elimination of carbon monoxide gas. Fuel cost is cut in half.

If you write maker identify as **IEN - 7137**

CLAMPS . . Flexible plastic units insulate and hold wiring in place

Source: COMMERCIAL PLASTICS CO.
2224-28 W. Wabansia Ave., Chicago 47, Ill.



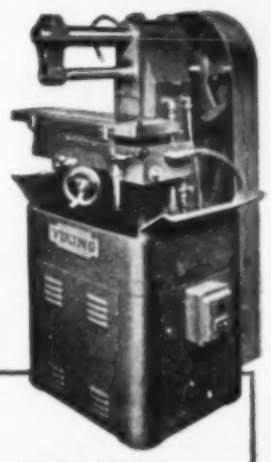
No metal is used

Clamps made of nylon and of saran, as well as the previously developed units employing ethyl cellulose, are now included in the company's line. Two designs are for parallel conductor wiring and for multiple strand cables or wiring bundles with diameter ranging from ⅛ to 3 inches. The saran design ranges from about $28 to $109 per thousand in quantities under 2,500. The nylon list is about $36 to $149 per thousand on the same basis.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 7138**

The Versatile VIKING Hydraulic SPEED-MILL



For conventional and climb milling

IDEALLY SUITED FOR SECONDARY SCREW MACHINE WORK

- INFINITE VARIABLE SPEED WITH DIAL-CONTROLLED DRIVE
- AUTOMATIC HYDRAULIC CYCLING
- OVERSIZE DESIGN AND CONSTRUCTION
- HEAVY FLYWHEEL DESIGN GIVES SMOOTHER DRIVE, BETTER FINISHES
- ATTACHMENTS FOR VERTICAL MILLING
- QUICK SET-UP, EASY OPERATION

The new improved Viking Speed-Mill, ideal for secondary operation work in screw machine shops, is the answer to many light, production milling problems. With the Viking, small, light pieces requiring multiple cuts, good finishes, and close limits can be machined quickly, accurately, and economically. Set-ups are fast, operation is easy, even with relatively untrained operators. Automatic hydraulic cycling and infinite spindle speed variations assure higher production efficiency and longer cutter life.

BRIEF SPECS: 7-5/8" x 24-1/4" table; Cutting lengths up to 9"; transverse movement, 2-3/4"; vertical adjustment, 10"; 2" dia. spindle; variable speeds 50 to 3600 r.p.m. Accommodates cutters up to 6" diameter.

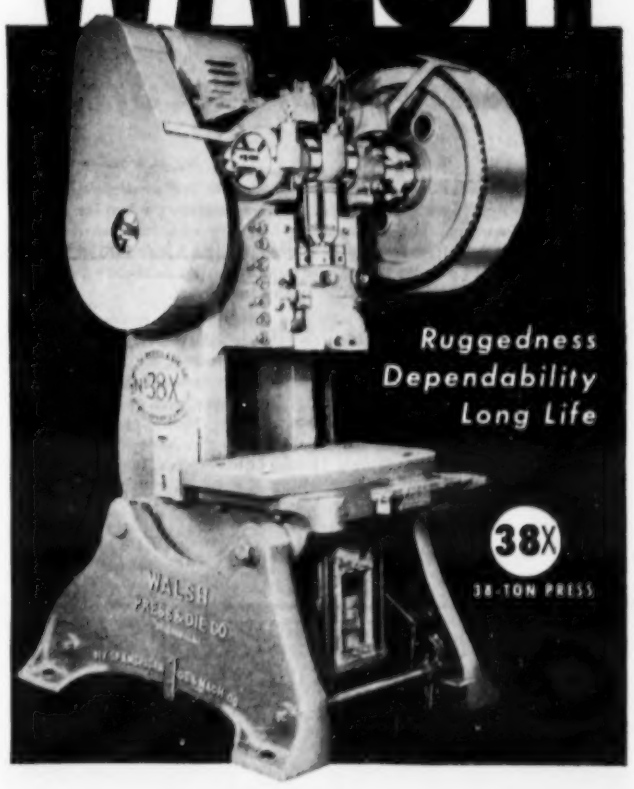
Emergency delivery in less than 30 days. For complete information write—

VIKING Industries

220 MONTAGUE STREET • ROCKFORD, ILLINOIS

If you write maker identify as **IEN - 7139**

WALSH



Rugged Walsh punch presses made in 1907 are still operating at a profit.

All presses lubricated and run-in with Molykote at the factory. For press recommendations without obligation send sample or blueprint to Engineering Department, Walsh Press & Die Co., Division of American Gage & Machine Co., 4709 W. Kinzie St., Chicago 44. EStebrook 8-6700.

WALSH PRESS & DIE CO.
4709 W. Kinzie Street, Chicago 44, Illinois

DIVISION OF
AMERICAN GAGE & MACHINE CO.
SIMPSON ELECTRIC CO. • SIZE CONTROL CO. • WALSH PRESS & DIE CO.

If you write maker identify as IEN - 7141

For Dependable Flow Control!

THE DAVIS NO. 60 FLOAT VALVE

. . . use

DAVIS FLOAT VALVES

ENGINEERS interested in working out efficient, trouble-free fluid level and flow control hookups will find a wide choice of units offered in the Davis line of float valves, float boxes, and fluid control valves.

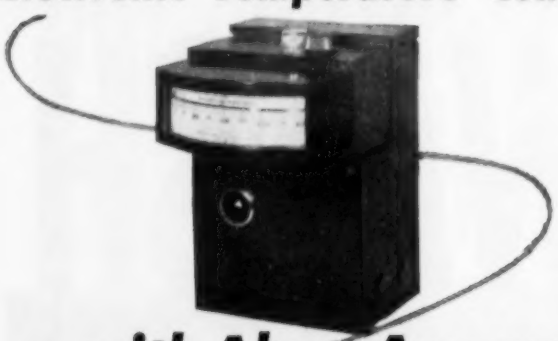
For Float Valve dependability the Davis No. 60 is unexcelled. Here are a few of its outstanding features:

1. The Famous Davis Single-Seat Pilot Stem Valve! Tight-closing and non-sticking. Standard sizes will open against any pressure up to 125 lbs.
2. No internal packing! Disc renewable easily and economically. Hot or cold liquid at high or low pressure handled without hunting or water hammer.
3. Sizes 3" and smaller are all-brass valves. Larger sizes have semi-steel body, bronze bonnet, piston and trim. Globe or angle body patterns. Send for Bulletin 101-B.

Davis
DAVIS REGULATOR COMPANY
2529 South Washtenaw • Chicago 8, Illinois

If you write maker identify as IEN - 7142

Electronic Temperature Control



...with Alnor Accuracy

Alnor, pioneer in the field of electronic temperature instruments, brings you automatic, precise temperature control for heat-treating furnaces, bake ovens—in fact, for any heating device whether electrically heated or fuel fired. It's the Alnor Temperature Controller—simple in design and operation, its accuracy proved on thousands of installations in many industries.

Easily and quickly installed, this instrument is ready to give you accurate controller service on new or existing heating equipment temperature—you merely set the pointer at the desired temperature and forget your indicating and controlling problems. But find out for yourself how Alnor accuracy and dependability can serve you in controller service; write today for complete details on the Alnor Temperature Controller . . . Alnor accuracy at a price you can afford. Illinois Testing Laboratories, Inc., Rm. 517, 420 N. La Salle Street, Chicago 10, Illinois.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 7143

How To Hold A Shaft Down!

"SPECIALS" for Special Problems

There is a complete line of special Security Locknut designs. If you have a fastener problem challenge us to solve it. Security Engineers are experts at keeping things tight.

KEEPING THE LINE SHAFTS from shaking the pillow block hold down nuts off was a problem for the Publishers Paper Company of Oregon City, Oregon, until they found out about "Security." Now the shafts stay "put"!

Security Locknuts keep the line shafts in place, cut down service time and reduce wear wherever vibration gives trouble. Security Locknuts can stop *your* vibration trouble too.

A Security Nut can be removed and replaced any number of times without materially loosing locking power or injury to the bolt. Installation is fast—no extra parts—nothing to shear! Fill in the coupon for more details.

We would like to have you see reports on authoritative tests. Security Locknuts are made in ⅜" to 3" bolt sizes. *Fill in the coupon for more details.*

Security
SECURITY LOCKNUT CORP.
1508 North Ave.
Melrose Park, Ill.

THE NUT YOU CAN'T SHAKE LOOSE

Please send me without obligation:
☐ A Thread Tolerance Chart.
☐ We have a fastener problem and would like to know more about Security Locknuts.

Company Name .....
Address .....
Town ..... Zone ..... State .....
Signed .....

If you write maker identify as IEN - 7144

COMMUNICATING . . Handset station for confidential talk and listen use

Source: EXECUTONE INC.
415 Lexington Ave., Room 1301, New York 17, N. Y.

Mounts on wall

One or more handset stations, new in the company's line of communicating equipment, can be installed in a setup with one or a number of previously developed talk-listen stations to provide confidential two-way conversation at the individual handsets.

A handset station is used to call a central point to obtain information, issue instructions, place orders. The user's voice is transmitted to the talk-listen station from where it issues in amplified volume to be clearly heard across a room, where confidential conversation is not required in an installation.

The employee at this location can answer the call without having to leave his work. His reply is heard only by the individual using the handset. A red "busy" light on each handset indicates when in use. Operation is on 50/60-cycle ac.

If you write maker identify as IEN - 7145

CLEANING . . Granular material dissolves in water, for metal products

Source: WHITFIELD CHEMICAL CO.
14223 Schaefer Hway., Dept. 9-A, Detroit 27, Mich.

No rinsing is needed

Powrite is a new granular water soluble material characterized by its freedom from foaming and lime scale deposit. It applies in power operated washing machines, tanks, spray booths, to remove oil, dirt, chips, abrasives from all types of metal products in production. Concentration is ½ to 4 oz. per gal. in either hot or cold water. Additional uses include maintenance paint cleaning, dust wetting, water softening.

If you write maker identify as IEN - 7146

TRUCK . . Rotating attachment handles materials in rolls, to 1 ton

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.

Any product in rolls

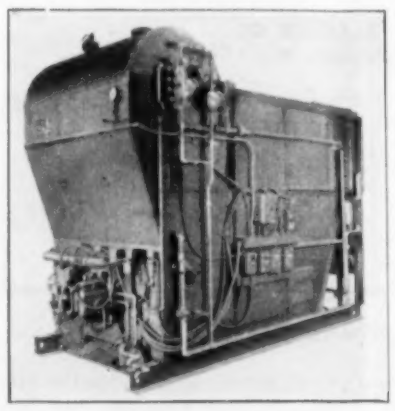
Rolls measuring 24 to 42 in. in diameter can be handled into and out of storage from a maximum height of 130 in. by this new hydraulic attachment for the Clark Powrworker electric truck. The attachment mounts a frame that raises, lowers and rotates on the truck uprights with a pair of clamping arms and plates to grip the roll as illustrated.

Controls for all of the movements are grouped at the operator's position beside the combination steering and control tongue. The truck provides both power travel and lift. The operator walks while the truck is in travel motion.

If you write maker identify as IEN - 7147

BOILER . . Self-contained assembly, water tube design, oil or gas fired

Source: MUND BOILERS INC.
1602 N. Indiana St., Los Angeles 63, Calif.



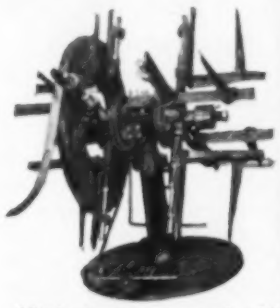
Ready to operate

Packaged Steam designates a new line of four self-contained automatically controlled boilers in ratings from 100 to 200 hp. Construction includes cross-drum arrangement to minimize height requirements, straight, steeply inclined water tubes, pre-cast refractory, water supply and accessories assembled at the factory. Rating is based upon 7½ to 8 sq. ft. per hp. The boiler is insulated, completely packaged and skidded with pump, motor, tank and connections pre-piped. A header plate permits quick access to the tubes for cleaning. Plugs in the header plates provide for inspection.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7148

LESS DOWN TIME, MORE PRODUCTION FROM PUNCH PRESSES FED BY



LITTELL DOUBLE AUTOMATIC CENTERING REELS

Vital minutes are saved, with practically no down time for coil replacement, when a Littell Double Reel uncoils stock to the punch press. The idle side of the reel is loaded while the other side pays out. When a coil is used up, the operator simply lifts the hub lock pin, then swivels the reel 180°, thus placing the reserve coil in press feeding position. The change-over is complete in a few seconds. Like Littell Single Reels, Littell Double Reels combine balance that means smooth running accuracy with rugged malleable iron and steel construction that assures year in, year out dependability.

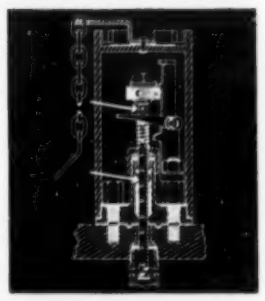
FOUR SIZES
No. 3 . . . . for coils up to 300 lbs.
No. 5* . . . . for coils up to 600 lbs.
No. 10* . . . for coils up to 1,000 lbs.
No. 25* . . . for coils up to 2,500 lbs.
*Can be furnished with motor drive

Write for catalog

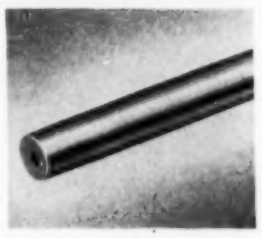
F. J. LITTELL MACHINE CO.
Speed with Safety
ROLL FEEDS • DIAL FEEDS
STRAIGHTENING MACHINES
REELS • AIR BLAST VALVES
District Offices: Detroit, Cleveland
4133 N. RAVENSWOOD AVE., CHICAGO 13, ILL.

If you write maker identify as IEN - 7149

Tube Talk — THE "HOW-TO" COLUMN



PROBLEM: Tubing required for "gauge rods" of tank car gauges made by Metal Goods Manufacturing Co., Bartlesville, Okla. Accurate, safe measurement of "pressure liquids" such as propane, butane, etc. demands heavy wall tubes that are smooth and precise for a perfect seal.



SOLUTION: Superior 304 Seamless Stainless Steel Tubing—9/16" O.D. with 3/16" wall

RESULT: Customer states Superior tubing is "free from drawing marks and other imperfections"—"unmatched for precision and excellence of finish"—"plays important part in assuring accurate measurement—and in keeping cars on open track with safety and reliability."

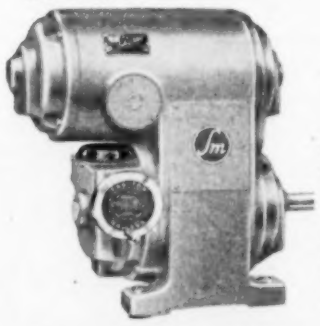
Suggestion—Write for information and literature today.

SUPERIOR TUBE COMPANY
2016 Germantown Ave., Norristown, Pa.

If you write maker identify as IEN - 7150

RIGID TESTS FOR A TOUGH JOB MET BY SPEED-TROL

Speed-Trols were selected to drive our Oblique Tilting Tumbling Barrels only after rigid tests, reports D. R. Graham of Columbia Belt Hook & Mfg. Co. Speed-Trols with integral reduction gears and positive oil seals withstood our every requirement such as starting under maximum load and running with shaft in any position from 45° above to 45° below horizontal.



20-page illustrated catalog... Sterling Speed-Trol, Slo-Speed, Klosd and Klosd-Tite Electric Power Drives. Write for catalog No. 1-A-422.

STERLING SPEED-TROL GIVES YOU VARIABLE SPEED CONTROL NECESSARY FOR:

Equipment adaptation to: Sequence synchronization—operators' abilities—load variations due to differences in quantity, quality, weight, size, tension, hardness or shape of material to be processed, machined, conveyed, blended, mixed, etc.

Process control of: Temperature—viscosity—level—pressure—flow—etc.

Time control of: Baking—drying—heating—cooking—pasteurizing—soaking—chemical action—etc.

With Speed-Trol you get the maximum in production, plant efficiency, quality and profit.

STERLING ELECTRIC MOTORS

Plants: New York City 51; Van Wert, Ohio; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities.

If you write maker identify as IEN - 7151

STOP COSTLY WATER HAMMER NOW!

WILLIAMS-HAGER FLANGED *Silent* CHECK VALVES

WILLIAMS-HAGER Flanged Silent Check Valves are the economical and dependable answer to troublesome and costly "water hammer" in all pump lines. These valves operate effectively in horizontal, vertical, upside down or angular positions—under any service or pressure condition.

WRITE FOR BULLETIN WH-851

This bulletin gives complete details on the cause, effect and control of damaging "Water Hammer." Use the coupon below for prompt delivery of your copy.

CHECK VALVES

THE WILLIAMS GAUGE CO., INC.
2900 Pennsylvania Avenue Pittsburgh 33, Pa.

If you write maker identify as IEN - 7152

SIGNODE RETAINING STRIPS

with visible pre-punched nail holes!

Here is an improvement our many customers asked us to make in widely used *Signode Retaining Strips.* Now nail holes are instantly visible even in dimly lit cars. As a result, *Signode Retaining Strips* become more time-saving, more practical and more desirable than ever!

Provide best doorway protection

Many loss and damage claims originate in damage to ladings at doorways. Bags snag. Other containers jam badly and car doors can't be opened without damaging the lading. *Signode Retaining Strips* effectively prevent such damage.

Signode Retaining Strips are made of steel strapping held between laminations of waterproof kraft paper 18" wide. The *Duplex* type can be cut in the middle and draped back to permit through-car loading. Strip ends are retensioned after car is loaded. Write for details, and application demonstration.

SIGNODE
STEEL STRAPPING COMPANY
2611 N. Western Ave., Chicago 47, Ill.
Offices coast to coast.
In Canada: Canadian Steel Strapping Co., Ltd.
Foreign Subsidiaries and Distributors world wide.

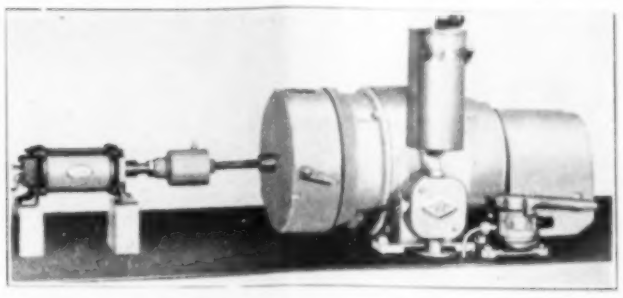
THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

ANOTHER TESTED AND APPROVED SIGNODE APPLICATION

If you write maker identify as IEN - 7154

MOTOR . . Hollow shaft design with magnetic brake for machine use

Source: REULAND ELECTRIC CO.
Westminster & W. Mission, Alhambra, Calif.



Designed to clear work fixtures

Illustrated is a typical set-up for the company's new hollow shaft design in its line of Type-C brake equipped motors. In this case, an air operated fixture is opened and closed by a pneumatic cylinder and control valve to operate a rod extending through the motor shaft to the work fixture on the opposite end. This is made possible by the construction of the brake, previously described IEN-5085-52. Its ring shaped solenoid is mounted on a base plate and the assembly is designed so the motor shaft can extend through the brake rather than having to terminate within it.

Typical uses for the motor and brake assembly, with suitable fixture operating equipment, apply in lapping, grinding, honing, spinning, turning.

If you write maker identify as IEN - 7155

ALUMINUM . . Magnesium type alloy available in plate and sheet stock

Source: KAISER ALUMINUM & CHEMICAL SALES INC.
1922-26 Broadway, Oakland 12, Calif.

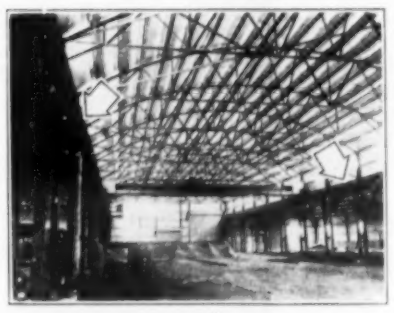
Specifications upon request

Type K155 is a new aluminum alloy for general metal working application as in refrigerator shelves, light reflectors, trays, utensils. The material forms readily and shows good corrosion resistance. It will take anodized finishes, is available in plate, flat sheet, coil and circle form in H1 and H3 group tempers for the service named.

If you write maker identify as IEN - 7156

BUILDING . . With runway structure for overhead crane, 5 to 10 ton rating

Source: BROOKVILLE MFG. CO.
P. O. Box 67-A, Brookville, Pa.



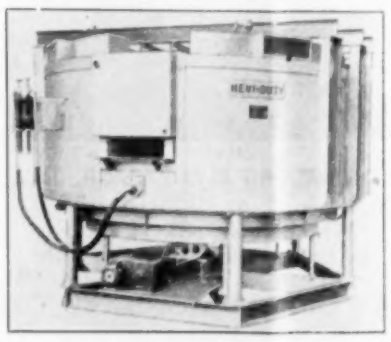
Shown in place

Independent runway **structures** are now available for the **prefabricated** steel **Brookville building,** previously described IEN-5685-52. Three load ratings are for 5, 7½ and 10-ton cranes on 40, 48 and 60-ft. clear spans. The runway can be ordered with a new building in which the crane and building columns are in welded assembly. They can be ordered later for bolted or welded assembly in the field on foundations provided by the user.

If you write maker identify as IEN - 7157

HEATING . . Rotary forge furnace, silicon carbide electric elements

Source: HEVI DUTY ELECTRIC CO.
4210-14 W. Highland Blvd., Milwaukee 1, Wis.



Replaceable elements

Exact temperature, combined with atmosphere control, characterizes the operation of this new rotary electric furnace. It is designed to operate continuously at 2,500 deg. F. Input rating is 200 kw. Work capacity is 1,500 lb. per hour. Variable speed drive can be adjusted to match production needs.

The operator loads the furnace by placing the cold parts through a door opening that measures 18 in. in width by 6 to 10 in. in variable height. The parts ride on a 7-ft. hearth. They are carried around on this hearth to return to the same opening to be removed. A water curtain protects the operator. A protective atmosphere is employed within the furnace area.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7158

COMPARE FACTS

Before you buy Electric Trucks

Here's material to help you make sound decisions when buying electric trucks. Lewis-Shepard Comparison Charts permit you to list merits of each manufacturer's truck. You get a visual, unbiased comparison that makes selection of the right truck easy. You get "reasons why" that the boys "upstairs" will appreciate when you ask for the appropriation.

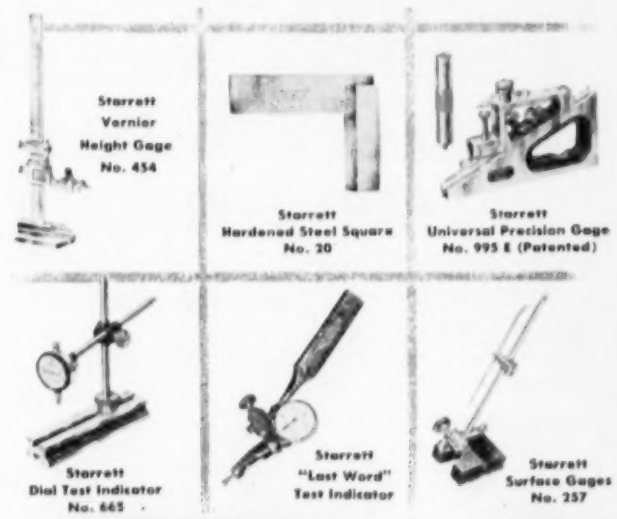
Lewis-Shepard invites this comparison because we feel that our complete line of electric trucks is genuinely superior . . . and if *you* compare the facts, we believe you'll agree. Get your Comparison Charts now, and ask for "Proof Folders" and Catalogs, too. *Write today!*

LEWIS-SHEPARD®
1033-6 Walnut St., Watertown 72, Mass.
Nationwide Service — See "Trucks, Industrial" in your Yellow Phone Book
The "MASTER" Line

If you write maker identify as IEN - 7159

FOR QUICKER—SURER SET-UPS

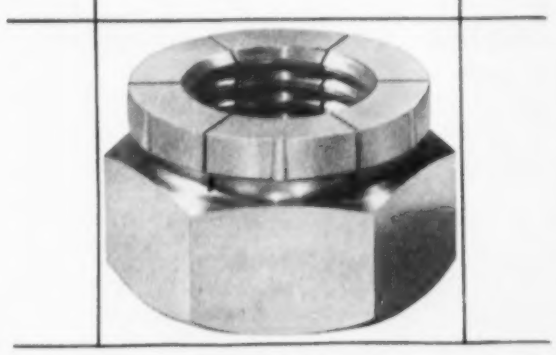
These Starrett Tools help get machine tools into action quicker with unquestioned accuracy. Because they save time where time means big money, they pay for themselves over and over. They belong in every well equipped shop. Ask your Industrial Distributor about them.



Starrett SINCE 1880 WORLD'S GREATEST TOOLMAKERS
THE L. S. STARRETT COMPANY, Athol, Massachusetts, U.S.A.
See THROUGH YOUR INDUSTRIAL DISTRIBUTOR

If you write maker identify as IEN - 7160

they won't work loose



FLEXLOC Self-Locking Nuts lock and stay tight, no matter how severe the vibration. Yet they can be easily removed and reused repeatedly. They are stop nuts too; they stay put in any position on a bolt when the locking threads are fully engaged. And FLEXLOCS are one piece, all metal—nothing to assemble, come apart, lose or forget. See your local industrial distributor for literature and samples or write SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

FLEXLOC LOCKNUT DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-7161

Bulletin Now Ready

on new Fenwal Miniature THERMOSWITCH® Controls

No charge . . . just write

If your product or project calls for temperature control that is exact and reliable but space saving is an important consideration, you will want to know more about the new Fenwal Miniature THERMOSWITCH unit. It incorporates in a small temperature control many characteristics previously found only in much larger controls.

This dependable little device can be adjusted anywhere within the range of 0°F to 200°F. It is extremely sensitive to temperature variations and positive in action . . . maintains normal control characteristics under vibrations of up to 5 G's . . . is as rugged as it is tiny. It lends itself perfectly to electrical, electronic, radio, radar and other protective uses where space is at a premium.

For complete information on the new Fenwal unit, send for your FREE copy of the Miniature THERMOSWITCH control bulletin. **Write Fenwal Incorporated, 76 Pleasant St., Ashland, Mass.**

Fenwal **THERMOSWITCH®**
Electric Temperature Control and Detection Devices
SENSITIVE...*but only to heat*

If you write maker identify as IEN-7162

WHICH POWER TYPE IS BEST FOR YOU?

. . . electric, gas, diesel or L.P. gas?

WHEN THE ANSWER IS *Electric* CLARK ELECTRICS ARE THE ANSWER ...*Here's why:*

1 Better battery efficiency—users report more work per amp-hour with CLARK.

2 Greater stability—safer for load, safer for operator.

3 Faster acceleration, greater speed—gets more work done, covers more ground.

4 Safer, smoother stops—with CLARK's positive-controlled, reverse torque braking.

5 "Application-engineered"—for special requirements, CLARK provides custom engineering.

No two jobs are exactly alike, so there's no such thing as one "best" power type. Which type is best *for you?*—that's the important question. The only person who can give a really *unbiased* answer is one who knows them all, and knows where they fit.

That's your local CLARK Dealer. He carries electric, gas, diesel and L. P. gas units—and he's got no ax to grind for any one. His object is to provide the one that's best for you. For example, careful application analysis often proves that *electric* trucks are best for certain jobs because of these advantages:

- ★ **Economical operation on low-cost electric power**
- ★ **Long life, less maintenance—electrics have fewer, simpler moving parts**
- ★ **Smooth, vibration-free handling of fragile loads, less wear on truck**
- ★ **Quiet, clean operation**

Which power type is right for you? No matter what it is, you'll find it in the CLARK line of quality handling equipment. You'll always be right when you buy from CLARK.

1903 1953 CLARK EQUIPMENT

CLARK ELECTRIC, GAS, DIESEL, L.P. GAS FORK TRUCKS
AND POWERED HAND TRUCKS · INDUSTRIAL TOWING TRACTORS

INDUSTRIAL TRUCK DIVISION • CLARK EQUIPMENT COMPANY • BATTLE CREEK 48, MICHIGAN

Please send: ☐ Condensed Catalog ☐ Driver Training Movie
☐ Have Representative Call

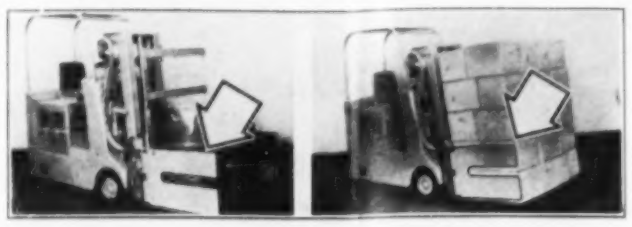
Name_____
Firm Name_____
Street_____
City_____ Zone____ State____

AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

If you write maker identify as IEN-7164

TRUCK . . Clamp attachment, hydraulic, picks up drums, cartons

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 3, Ohio



Slots clear drum beads

Flat arms on the two sides of this new attachment can be brought in to bear against the sides of a pile of cartons. A central slot in each arm permits them also to pick up steel drums since the slots clear the beads in the drum wall. The assembly provides for side shifting so it is not necessary to "spot" the truck accurately when in confined positions.

Load rating is 1,800 lb. on 14-in. centers when the attachment is employed on a 1-ton truck. Maximum opening is 52 in. and minimum is 18 inches. Hydraulic control centers at the operator's position.

If you write maker identify as IEN-7165

HEAT TREATING . . Graphite rods for use in electric salt bath furnaces

Source: STACKPOLE CARBON CO.
1942 Tannery St., St. Marys, Pa.

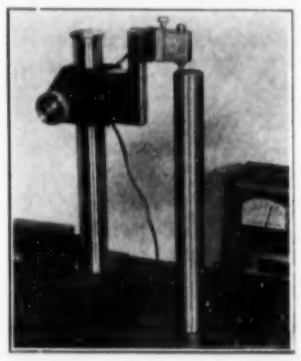
Decarburization is avoided

Type HC-1 is a graphite grade employed by the company in its new line of graphite rods for use in salt bath furnaces. The rods are available in diameters from 1½ to 2½ in. and in lengths to 30 inches. Bars measuring to 2 in. in square cross-section and to 36 in. in length are also available.

If you write maker identify as IEN-7166

GAGE . . Electronic comparator reads over and under master dimension

Source: CLEVELAND INSTRUMENT CO.
733-37 Carnegie Ave., Cleveland 15, Ohio



Ask for Bulletin 532

Adaptor bracket has been added as an accesory part for the Par-Ac electronic comparator, previously described IEN-2600-52. The bracket attaches to the back of the saddle to carry the electronic indicator head over the back of the gage base. This permits application of the gage for work measurements on a surface plate.

The bracket can be attached to the saddle so it positions the gage head to reach high or low surfaces. Vertical adjustment is between 6½ and 17¾ in. above the surface in high position. It is 0 to 11 in. low.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7167

Brookville fully insulated
STEEL BUILDINGS
STANDARDIZED

COMPLETE Fully Insulated All-Steel ROOFS

STANDARD CLEAR SPANS
40′ 48′ & 60′ or Multiples thereof
TRUSS CENTERS 16′0″
Ceilings and Lighting easily installed

Brookville Fully Insulated Structures are so designed that the roof section of these standard buildings can be furnished separately for application on other sidewall constructions. The roof is furnished as a complete package — with gable closures, flashings and fasteners, everything you need above the plate line.

Illustrated folder upon request.

Brookville Manufacturing Co.
P.O. BOX 67 · BROOKVILLE, PA.

If you write maker identify as IEN-7168

SPECIAL DELIVERY

of the reduced pressures you want!
. . . with this STANDARD valve

Here is a standard diaphragm regulator that can handle your *special* pressure control requirements. It is furnished in a wide range of sizes, types (self-contained, instrument or pilot control), bodies, and trim, to your specification. For water, oil, steam, air or gas. No. 119 single seated, No. 114 double seated, sizes ½" to 6", screwed, standard or extra heavy flanged. Direct or reverse acting. Tested and approved by leading engineers and contractors — the answer to your regulator problems.

No. 114 & No. 119 REGULATOR

- Pressures to 300 psi reduced to zero.
- Bronze, semi-steel or steel bodies
- Spring loaded, interchangeable diaphragms
- For water, oil, steam, air or gas

WRITE FOR CATALOG NO. 53E

KECKLEY
pressure regulators • float boxes
temperature regulators
pop safety valves • relief valves
float valves • balanced valves
pump governors • strainers

O. C. KECKLEY COMPANY
400 West Madison Street • Chicago 6, Illinois

If you write maker identify as IEN-7169

Makes the Finest Flares You Have Ever Seen

NEW IMPERIAL ROL-AIR® FLARING TOOL

3 Ways Better

1 Burnishes Flare
2 Wall Thickness Maintained
3 No Marring of Tubing

Makes correct 45° S A E flares. Goes far beyond ordinary flaring tools in quality of flare and ease of operation.

Automatically Burnishes Flares

A lost-motion-mechanism causes its multi-faced flaring cone to burnish flare automatically giving flare a highly polished finish which assures tighter joints.

Makes Stronger Flares

Because flare is not formed against die block, original wall thickness is maintained at base of flare . . . stronger flares are assured.

No. 500-F ROL-AIR FLARING TOOL flares and burnishes 3/16", 1/4", 5/16", 3/8", 1/2", 5/8" O.D. tubing.

See Your Supply House

THE IMPERIAL BRASS MFG. CO., 508 S. Racine Ave., Chicago 7, Ill.
In Canada: 334 Lauder Ave., Toronto, Ontario

IMPERIAL Pioneers in Tube Fittings and Tubing Tools

If you write maker identify as IEN-7170

MORE LIGHT . . . LOWER COSTS WITH
MERCURY VAPOR LAMPS

400W
JH-1
Approx. Lumens 18,000
Average life
5,000 hours

The new high intensity Amplex Mercury Vapor Lamps for industrial and large area outdoor lighting bring completely new standards of efficiency and economy. Compared with incandescents, they provide almost twice the light for the same wattage consumed . . . and the JH-1 lamp is color-corrected to give a warm, neutral brilliance.

Besides that, Amplex Mercury Vapor Lamps have several times the burning life of ordinary lamps and reduce replacement costs. They come in a range of sizes and include lamps designed for *black light* applications. Write for the whole story.

Amplex Corporation, Dept. X-6.
111 Water St., Brooklyn 1, N. Y.

AMPLEX

Sealed-Beam Reflector Lamps, Colorbeam Lamps, Spotlites and Floodlites, Industrial Infra-Red Heat Lamps, Vibration and Rough Service Lamps, Street Lighting Lamps, Traffic Signal Lamps, Incandescent Lamps, Fluorescent Tubes, Display Accessories.

If you write maker identify as IEN - 7171

Sheehan's INDUSTRIAL CONVEYORS

FLAT TOP METAL BELT CONVEYORS

Versatile Durable Economical

Sheehan Flat Top Conveyors are being used to speed production parts through infra-red ovens, washing and degreasing operations. They are being used by food packing, metal working and many other industries in indoor installations and out of doors.

Metal belts of galvanized steel, electro-cadmium plated or stainless steel, driven by Sheehan Positive Drive Belt Sprocket assure production under many difficult conditions.

Sheehan Conveyors are designed to further production automation in every industry.

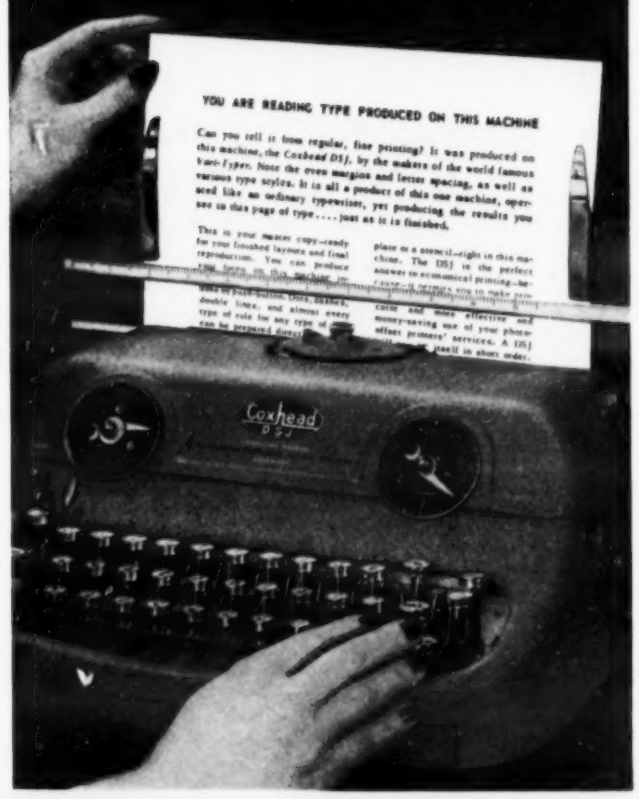
Complete literature and specifications for Sheehan Forge & Press Conveyors on request. Write or wire today!

Conveyors
R. T. SHEEHAN CO. PLYMOUTH, MICH.

If you write maker identify as IEN - 7172

printer's style type

For Manuals, Reports, Forms, Tracings, Booklets



Hundreds of Instantly Changeable Faces!

Choose any style or size from a variety of beautiful faces, 6 pt. to 12 pt. Changes can be made in the middle of a line or paragraph. Both margins are automatically evened and the copy is instantly ready for your litho machine, mimeo, or photo-offset camera. You will save from 25% to 75% on your present duplicating or printing of office forms, booklets, price and parts lists, house organs and practically any job to be reproduced.

Coxhead DSJ Vari-Typer

Text for this ad set on Coxhead DSJ. Headlines set on HEADLINER.

RALPH C. COXHEAD CORP.
720 Frelinghuysen Avenue
Newark 5, N.J.

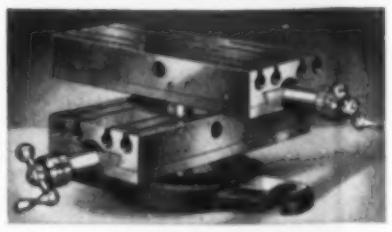
Please send Vari-Typer Booklet 165

NAME.....
COMPANY.....
ADDRESS.....
CITY.....ZONE...STATE.....

If you write maker identify as IEN - 7174

INDEXING . . Universal table to position work on a machine table

Source: SOUTH BEND LATHE WORKS
301 E. Madison St., South Bend 22, Ind.



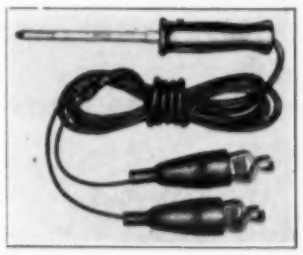
To drill, mill, shape

Identical tables mounted on 360-deg. swivels are superimposed, one upon the other, in this new indexing equipment. The lower table is equipped with a mounting base for assembly on the table of a machine tool or on the faceplate of a lathe. The table surfaces measure 4 by 8⅞ in. and are precision ground. Four slots take work holding bolts. Longitudinal slides provide maximum travel of 4 inches. The swivels are graduated in degrees. Take-up gibs can be adjusted to maintain accurate operation. The lead screws are equipped with precision dials.

If you write maker identify as IEN - 7175

SOLDERING . . Electric iron clips to 6 or 12 volt storage battery

Source: HEXACON ELECTRIC CO.
155 W. Clay Ave., Roselle Park, N. J.



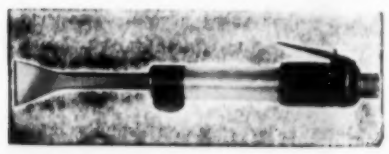
List is $17.60

The element that supplies the heat for this new No. 612 soldering iron is embedded in the tip and is controlled by a switch button on the plastic handle. The 12-ft. leads terminate in spring clips for use on battery terminals. Tip and element are replaceable as a unit. Tip diameter is 7/16 inch. Overall length is 12½ inches. Input is 200 watts.

If you write maker identify as IEN - 7176

HAMMER . . Pneumatic tool to chip spatter and flux from a weld

Source: THOR POWER TOOL CO.
173-77 N. State St., Aurora, Ill.



Blow the chips away

Button, lever or push type throttle can be specified on this new Size-5 Thor pneumatic chipping hammer. All are designed to remove weld spatter and flux, to scrape paint, remove rust, drive wood chisels, clean up small castings and molds.

Weight is a little over 2 pounds. Length is 7¾ inches. The square nose measures ½ inch. Connection to a shop air line is through a ¼-in. hose. Standard equipment includes a quick change retainer and one angle chisel. Other chisel designs are available to order.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7177

FOR PHENOMENAL SAVINGS IN PLANT LAYOUT

TEMPRINTS BLUE PLATE

FROM LAYOUT TO BLUEPRINT WITH NO DRAFTING

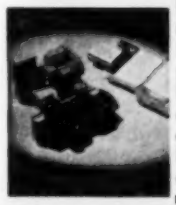
TemPrints are outline prints on transparent film, reproducing to exact scale the standard machines in your plant or made to engineering specifications of your particular equipment . . . TemPrints are also supplied for walls, partitions, windows, office furniture and shipping equipment.

TemPrint Grids are transparent sheets cross-lined to ¼" scale suitable for layout and floor plans.

When TemPrints are cutout and applied to the grids, the result is an accurate layout of your plant or office. Any number of duplicate prints accurately reproduced in the same size may then be made by processing through an Ozalid machine.

SIMPLY MAKE THE LAYOUT – AND THE LAYOUT WILL MAKE YOUR PRINTS
TEMPRINTS PUT THE PLAN INTO YOUR PLANT

MARINE SCALE INDUSTRIAL MODELS



Marine has specialized in scale models for many years. Marine Miniatures are accurate reproductions to scale of well-known plant machinery and equipment. All models are dimensionally accurate — may be identified instantly. A special catalog is available on request.

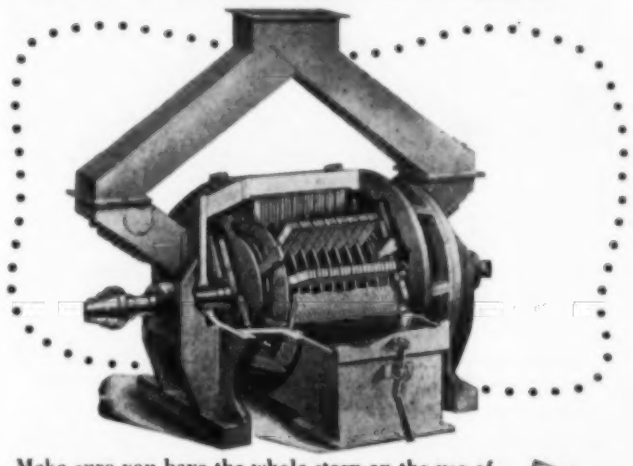
SEND FOR COMPLETE ILLUSTRATED CATALOG TODAY!

HARMAN ASSOCIATES

Dept. H-3, Halesite, L. I., N. Y.

If you write maker identify as IEN - 7178

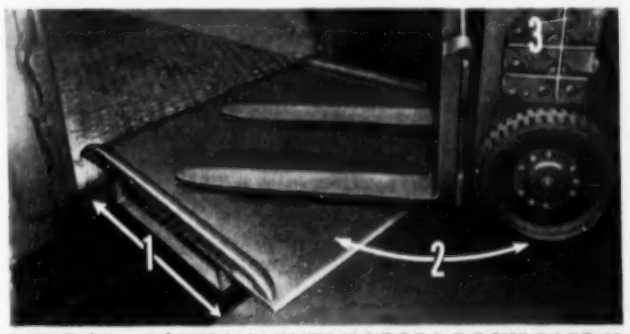
For fine granulation and uniform quality of product ---PRATER *Triple Reduction* DUAL-SCREEN PULVERIZER



Make sure you have the whole story on the use of Prater Pulverizers and the advantages of Granular Grind in the chemical, food, pharmaceutical, oil bearing seed, distilling, packing, wood, ceramic and feed mill industries. Get new edition of illustrated book. No obligation.

PRATER PULVERIZER COMPANY
1536 So. 55th Court Chicago 50, Ill.

If you write maker identify as IEN - 7179



THIS light-weight HEAVY-DUTY MAGCOA DOCKBOARD IS

A BETTER INVESTMENT–*here's why*

There are three reasons why this is the perfect Dockboard for *this* installation. (1) It is the exact length required for *this* car-to-dock span, with proper allowance for car width variations. (2) The dock end of the board is flared just enough for use on *this* narrow dock, permits part of the turn to be made while the truck is on the board. (3) It is built for weight requirements of *this* company's handling equipment and loads, with a margin of safety to spare.

Your dock is different and your local Magcoa Representative knows it. He's a loading dock expert—thorough and quick in fitting a Magcoa Dockboard to your specific needs. Then mass-production specialists at the Magcoa factory take over. Result: a light-weight HEAVY-DUTY Dockboard that solves your specific problems, quickly . . . and permanently.

Safety, Service, Facts—Quarter-round safety curbs, one-piece hand holds and the other Magcoa safety and efficiency features make your Dockboard safe, permanent equipment. You get Magcoa Service, too, if abuse or misuse puts your Dockboard out of operation. Our free new **Facts File** gives you all the facts. It's yours for the asking.

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 14, IND.

If you write maker identify as IEN - 7180

42 STOCK SIZES

HALLOWELL

SOLID STEEL COLLARS

Your HALLOWELL industrial distributor stocks these precision machined steel collars in sizes to fit shafts from 3/16" to 3" diameter inclusive. The famous self-locking UNBRAKO Socket Set Screw—the screw that won't work loose—assures positive positioning of every HALLOWELL collar. Write for literature. SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

HALLOWELL POWER TRANSMISSION DIVISION

SPS
JENKINTOWN PENNSYLVANIA

If you write maker identify as **IEN - 7181**

MILLIONS OF GALLONS OF LIQUIDS ARE ACCURATELY MEASURED EACH YEAR BY THESE . . .

. . . BOWSER XACTO METERS

Wherever precision measurement is essential to assure constant uniformity of product—control costs, or simplify handling of liquids—there you will usually find Xacto meters on the job.

Right now—in many plants of all types—Bowser Xactos are efficiently handling 662 different liquids.

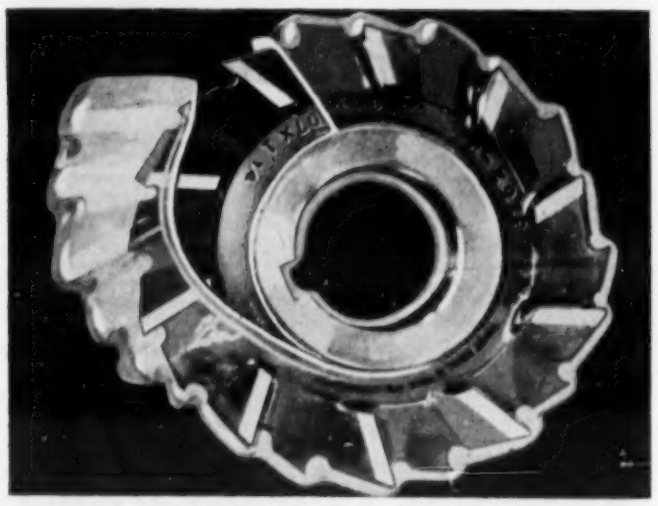
It will pay you to consult with your nearby Bowser representative.

BOWSER, INC.
1338 Creighton Ave., Fort Wayne 2, Ind.

BOWSER
Regional Offices • Atlanta • Chicago
Cleveland • Dallas • Kansas City • New York
San Francisco • Washington, D. C. • Hamilton, Ontario

If you write maker identify as **IEN - 7182**

POSITIVE PROTECTION
and ready to go places with
WESTCOAT
TRANSPARENT
HOT-DIP COATING



For exceeds requirements of military specification JAN-C-149, Type II

Here's a partial check list of how WESTCOAT-CLEAR No. 202 saves you money, time and work!

- Quick-dip, fast-set coating—replaces old packaging methods.
- Strips easily—like peeling a banana for quick depreservation.
- Withstands 1000 hrs. of 100% relative humidity at 100° F. without rusting.
- Save money—reusable. Simply strip off, remelt and reuse.
- Transparent—instant product identification.
- Cushions shock and rough handling—protects cutting tools, delicate instruments.
- A *must* for world-wide shipping—saves weight, space and protects against rust, abrasion.
- Unaffected by temperature changes—minus 40° to 160° F.

Learn how WESTCOAT-CLEAR can end your packaging worries. Spend pennies and save dollars. Investigate WESTCOAT-CLEAR now!

WESTERN COATING COMPANY
Eastern Plant—P. O. Box 227, Elyria, Ohio
Western Plant—85 West Union Street, Pasadena 1, California
Representatives in principal cities

PROTECT WITH **WESTCOAT**

SEND IN COUPON TODAY

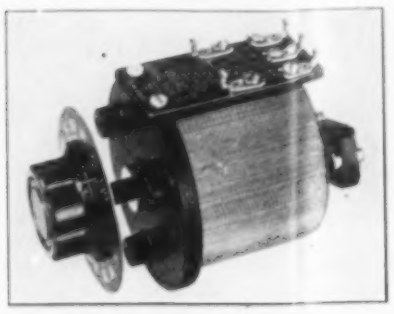
SEND ME DESCRIPTIVE LITERATURE ON WESTERN COATING PRODUCTS.

NAME & COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as **IEN - 7184**

TRANSFORMER . . Variable voltage, continuously adjustable for control

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.



Ask for Variac Bulletin

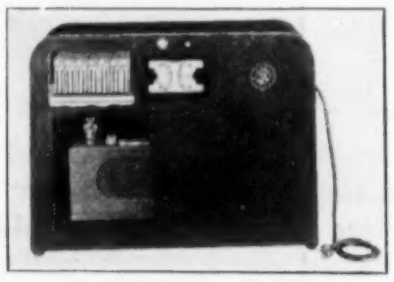
Type V-2 is a new addition to the Variac line of continuously adjustable autotransformers. It, like the others in the line, consists of a single layer winding on a toroidal core of transformer steel. A carbon brush is moved over the coil by turning a calibrated dial. The brush remains in contact with at least one turn of wire as it taps off a portion of the total voltage across the winding. Adjustment is from zero to 17 per cent above line voltage. Type V-2 rates 2 amp. and lists at $12.50.

At the same time, the company announces development of a new brush-track surface, known as Duratrak. It is now supplied on all Variacs. It is a silver alloy coating that prevents contact surface deterioration even when the transformer is operated continuously at fixed brush settings. Duratrak is described and the complete line is illustrated and cataloged in a new 12-page bulletin.

If you write maker identify as **IEN - 7185**

TESTING . . Power supply for the Beckman spectrophotometer

Source: FISHER SCIENTIFIC CO.
719 Forbes St., Pittsburgh 19, Pa.



Efficient design

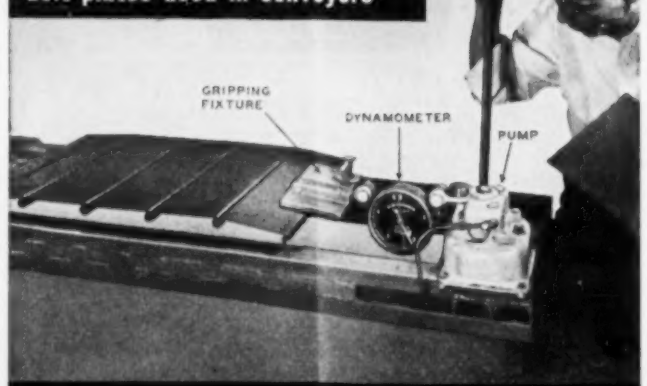
New design of the Fisher spectrophotometer power supply includes six 7½-volt dry cells in a special built-in compartment with a seventh dry cell to take part of the load. Line voltage is entered through a constant voltage transformer where it is stepped down, rectified and fed to the storage battery which smooths out any fluctuations. As the spectrophotometer consumes power the supply unit replenishes the battery charge and so holds the voltage constant. When the instrument is not in use the power supply serves as a trickle charger to keep the battery at full charge. A special six conductor cable connects the power supply to the instrument.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Find what you want?
Try the product index, front page

If you write maker identify as **IEN - 7186**

DILLON Dynamometer checking strength of joints between steel belt plates used in conveyors



Precision Built

Compact. 5" dial model measures only 8¼"x6¼"x3". Weighs 8 lbs. Fits into "tight" spots.

Accurate Dependable

MAKE *SURE* WITH A DILLON DYNAMOMETER

In actual field tests or in the lab., DILLON Dynamometers provide accurate test results. Measure static or moving loads instantly in conjunction with hoists, turnbuckles, air pistons, etc. 13 capacities from 0-500 lbs. up to 0-100,000 pounds. With max. pointer. WRITE FOR ILLUSTRATED LITERATURE AND FREE TENSILE STRENGTH COMPUTER.

W. C. DILLON & CO., INC.
14620K Keswick Street
Van Nuys (Suburb of Los Angeles) Calif.

If you write maker identify as **IEN - 7187**

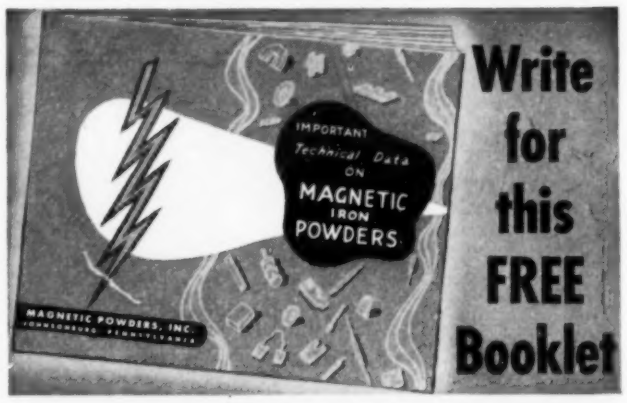
In single and double strand units 1" throat—a great time saver . . . no lift-truck or jitney should be without "Granny Grip"—a great time saver.

(two strand)
$29.00 net

Quickly attaches itself to open top containers, sheet stock, boiler plate, etc. . . . Lifts anything over which her jaws can be slipped (one-inch throat)—equally adaptable when used with overhead cranes, chain falls, jib cranes . . . with lift trucks it lifts and snakes containers into and out-of seemingly inaccessible places. The heavier the load the tighter the grip—tests to 7850 pounds . . . users tell us—you can make no better investment of any kind in material handling equipment. "Granny-Grip" is a pip of an investment. Send us an order for a sample—once you have tried them—you will want to put them on all of your equipment.

The BOYER-CAMPBELL COMPANY
6540 St. Antoine "Everything for Safety" DETROIT 2

If you write maker identify as **IEN - 7188**



Write for this FREE Booklet

CONTAINING IMPORTANT INFORMATION ON

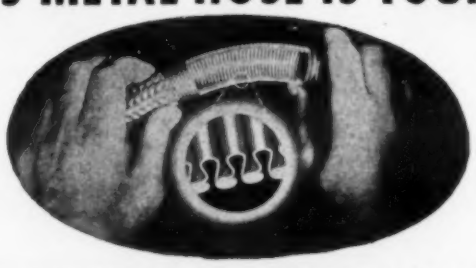
Laboratory Controlled • Quality RAW MATERIALS *for* ELECTRONIC and INDUSTRIAL APPLICATIONS

Visit us at the:
Basic Material Exposition Palace
New York, New York
June 15th-19th • Booth #319

MAGNETIC POWDERS INC.
POST OFFICE BOX 247
JOHNSONBURG, PENNA.

If you write maker identify as **IEN - 7189**

WHICH OF 1001 USES FOR THIS METAL HOSE IS YOURS?



Are you overlooking an opportunity to improve the performance, life, or salability of your equipment with metal hose?

Yours may be one of the hundreds of undiscovered uses for metal hose—especially for flexible, pressure-tight TITEFLEX® Metal Hose.

The special construction of Titeflex, and the variety of alloys, sizes, and fitted lengths enable you to combat severe temperature, pressure, and corrosion conditions where a flexible connection is necessary.

For maximum results, ask us for design suggestions and help in hose selection.

Titeflex Let Our Family of Products Help Yours

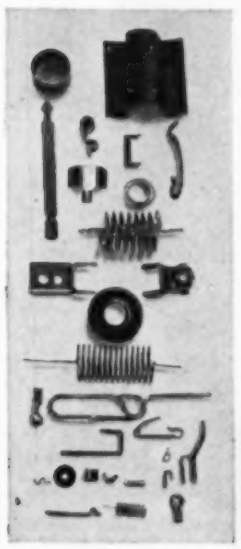
MAIL COUPON TODAY

TITEFLEX, INC.
506 Frelinghuysen Ave., Newark 5, N. J.
Please send me information about Titeflex Metal Hose and its applications.

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN - 7190

Priced Right! WIRE FORMS & Metal Stampings



High-speed, quality production with custom-made precision. Wire formed to any shape for every need.

IMMEDIATE CAPACITY FOR DEFENSE SUB-CONTRACTS

STRAIGHTENING & CUTTING
Perfect straight lengths to 12 ft.
.0015 to .125 diameter

WIRE FORMS
.0015 to .125 diameter

SMALL METAL STAMPINGS
.0025 to .035 thickness
.062 to 3 inches wide

Specializing in Production of Parts for Electronic, Cathode Ray Tubes and Transistors

Write for illustrated folder
Send Blueprints or Samples for Estimate

ART WIRE and STAMPING COMPANY
2-G BOYDEN PLACE
NEWARK 2, N. J.

If you write maker identify as IEN - 7191

STOP WATER DAMAGE!

Sprinkler-Stopper

Approved by New York City Bureau of Standards and Appeals No. 932-49-SA.

Millions of dollars in water damage to stock and equipment is caused annually by sprinkler systems which continue to release floods of water after the fire is out! Even in the absence of fire, an unexpected mechanical failure can cause a sprinkler head to operate, causing tremendous, unnecessary water damage.

Now you can protect your plant with "Sprinkler-Stopper", a valuable device which, when inserted into the ring of a sprinkler head, instantly stops the flow of water, but leaves the rest of the sprinkler system operative. As the sprinkler control valve need not be turned off, the plant is still protected against fire until all danger is passed.

Already in use in hundreds of plants, warehouses and public buildings, a "Sprinkler-Stopper" placed beside each fire extinguisher is a vital piece of equipment. "Sprinkler-Stopper" will prove of tremendous value in the event of fire, or if a mechanical failure should cause a sprinkler head to operate prematurely.

"Sprinkler-Stopper" is manufactured in two styles, Model A and Model B, which will accommodate virtually all of the sprinkler heads in current use. Be sure to specify the type head in your plant when requesting information.

Write for free catalog to Department N4

SPRINKLER-STOPPER SALES COMPANY
15 W. Palisade Avenue Englewood, N. J.

If you write maker identify as IEN - 7193

WELDING . . AC arc machine, two models rate to 180 and 295 amperes

Source: NATIONAL CYLINDER GAS CO.
838-42 N. Michigan Ave., Chicago 11, Ill.

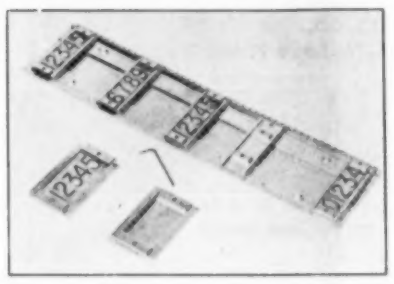
For general use

New design of the Sureweld machine employs an improved four coil transformer arranged so mechanical ventilation is not required, a movable magnetic core section permitting stepless current adjustment and a control lever that requires relatively few turns to set the circuit at any point within the machine range. Two models rate 20 to 180 amperes and 25 to 295 amperes. Both meet NEMA Specifications and are Underwriters' Laboratories approved. The smaller machine meets REA Specifications also in its size range.

If you write maker identify as IEN - 7194

ENGRAVING . . Copy holder for master characters on Engravograph

Source: NEW HERMES ENGRAVING MACHINE CORP.
15-17 University Place, New York 3, N. Y.



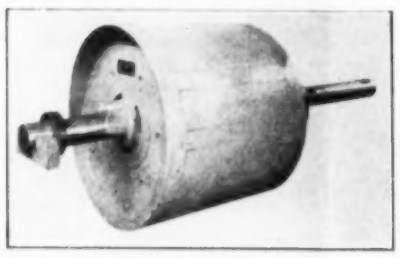
Scale assists set-up

Letters and numerals can be set up as in marking long bands, on the Engravograph machine with this new copy holder. The unit eliminates need for realignment of the work and permits horizontal engraving in one continuous operation. It conserves space on the work by a maximum number of characters per line.

If you write maker identify as IEN - 7195

SEPARATING . . Magnetic pulley employs Alnico, 42 by 38 inches

Source: STEARNS MAGNETIC INC.
626 S. 28th St., Milwaukee 46, Wis.



Stops tramp iron

New size has been added to the company's line of permanent magnet pulley type separators, previously described IEN-3873-49 The new unit measures 42 in. in diameter and has a 28-in. ground face to take a 36-in. belt. The pulley has been designed to process run of mine coal, to 10 in. in lump size.

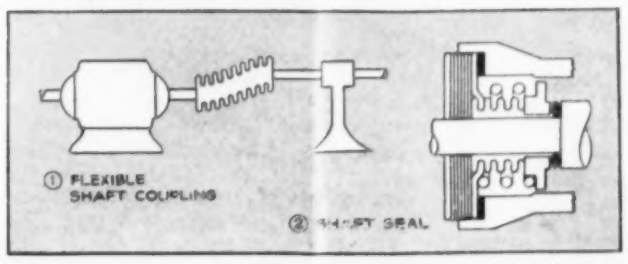
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7196

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

SHAFT COUPLINGS AND SEALS . . . Flexible, leak-proof bellows units offer time-and-money-saving advantages in many applications.

38.3.6A



1. A smooth, steady drive, even if shafts are slightly misaligned is a major advantage of Clifford bellows shaft-couplings over ordinary flexible couplings. Bellows on driving shaft of small motor transmits true, constant velocity torque to driven shaft. Assembly time is saved since driving and driven shafts need not be precisely aligned. Servo mechanisms are typical of the varied types of equipment benefiting from this use of Clifford bellows.

2. Used as sealing elements, Clifford bellows shaft seals prevent leakage of enclosed fluid around rotating shafts. All-metal construction affords maximum resistance to leakage of gases, corrosive liquids and other fluids even under extreme temperatures. Leading makers of air conditioning systems, for example, find Clifford bellows the ideal shaft seals for vital protection against refrigerant gas leakage.

Clifford is glad to answer your questions or provide "bellows-engineering" help.

Write for bulletin: "What To Consider When Selecting A Metallic Bellows." Clifford Manufacturing Company, 146 Grove Street, Waltham 54, Massachusetts. *Division of Standard-Thomson Corporation.* Sales offices in New York; Detroit; Chicago; Los Angeles; Waltham, Mass.

If you write maker identify as IEN - 7197

Roll a NEW Floor OVER the old with

Redi-Roll
Factory Prepared, Heavy Duty Plastic Resurfacer
•
NO WAITING!
Let Heaviest Traffic Roll Over It Immediately!

Abolish downtime due to floor failures. Just roll *Redi-Roll* over the old floor to a compacted ¼" thickness and USE AT ONCE. It's spark-proof! It's tough! It's industry's best floor buy. Write for details now . . . today!

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 5

If you write maker identify as IEN - 7198

Get BETTER Control with POWERS FLOWRITE VALVES

VALVE TOP—Durable moulded neoprene diaphragm (1) has positive sealing bead which provides increased sealing action with increasing control pressure. Efficient diaphragm form insures ample and constant operating power thru full travel. Piston Plate Assembly (2) has a free floating thrust plate which absorbs side thrust. Closely guided piston plate maintains stem in accurate alignment.

ADJUSTING SCREW—Ball bearing non-rising type with starting pressure adjustable from 0 to 17 psi. Has enclosed rust proofed steel spring for full travel in 5 or 10 psi. control pressure change.

BONNET ASSEMBLY—Polished stainless steel stem in preformed lubricated metallic packing insures long life and low hysteresis.

VARIETY of VALVE BODIES
Sizes ½" thru 8"
For line pressures below 250 psi. Rugged construction to withstand piping strains.
Write for Circular FMV

(FM5)

Reduce Maintenance with FLOWRITE VALVES

THE POWERS REGULATOR COMPANY
3400 Oakton Street, Skokie, Illinois
Established 1891 • Offices Over 50 Cities • See Your Phone Book

If you write maker identify as IEN - 7199

standardize on standard

UNBRAKO button head SOCKET SCREWS where countersinking isn't practical

Heat treated alloy steel gives them greater strength. Hex socket minimizes danger of marred or mutilated heads even when the screws are used again and again. Low head height streamlines designs. Stocked and sold by leading industrial distributors everywhere. Write for UNBRAKO Standards. • SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

UNBRAKO SOCKET SCREW DIVISION **SPS** JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN-7200

CREATIVE . . . FUNCTIONAL

Elevated Water Tank

FOR FIRE PROTECTION

This special elevated water tank was installed for fire protection at the Gerber Products plant in Rochester, N. Y. It holds 75,000 gallons and provides a gravity water supply that's always ready to flow the instant a sprinkler head opens.

Improve your own fire protection system with a gravity water supply. When requesting quotations please state capacity required, height to bottom and location.

CHICAGO BRIDGE & IRON COMPANY

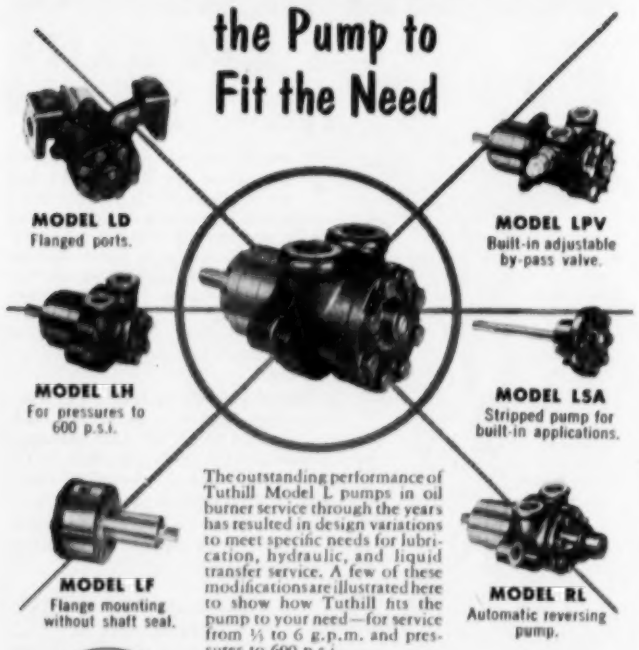
2123 McCormick Building • Chicago 4, Illinois

Atlanta • Birmingham • Boston • Cleveland • Detroit
Houston • Los Angeles • New York • Philadelphia • Pittsburgh
San Francisco • Seattle • Tulsa

Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA.

If you write maker identify as IEN-7201

Here's How TUTHILL Builds the Pump to Fit the Need



The outstanding performance of Tuthill Model L pumps in oil burner service through the years has resulted in design variations to meet specific needs for lubrication, hydraulic, and liquid transfer service. A few of these modifications are illustrated here to show how Tuthill fits the pump to your need—for service from ⅓ to 6 g.p.m. and pressures to 600 p.s.i.

Write for Catalog No. 101 for complete details

TUTHILL PUMP COMPANY

939 East 95th Street, Chicago 19, Illinois

Canadian Affiliate: Ingersoll Machine & Tool Company, Ltd. Ingersoll, Ontario, Canada

If you write maker identify as IEN-7202

Announcing the HOWE Mechanoprint

The Modern Weight Recorder

The new Howe Mechanoprint, companion instrument to the Howe Teleprint, is a greatly simplified and modern Mechanical Weight Recorder built-in as an integral part of the Howe Tape-Drive Dial head. It is fast, ruggedly designed and has a minimum of working parts to assure the user of trouble-free operation and long life. See how you can use the versatile Mechanoprint for increased weighing accuracy and speed — Ask for descriptive Form AM-A1.
SALES AND SERVICE BRANCHES IN ALL PRINCIPAL CITIES

The HOWE SCALE Co.

Dept. IE-6, Rutland, Vermont.
Please send me:
HOWE MECHANOPRINT FORM AM-A1 ☐
HOWE CONDENSED SCALE CATALOG No. 11 ☐
Name ____ Title ____
Company ____
Address ____
City ____ State ____

If you write maker identify as IEN-7203

SPREADING . . Roll type machine applies adhesive to a jute sheet

Source: UNION TOOL CORP.
316 E. Market St., Warsaw, Ind.

Chromium plated rolls

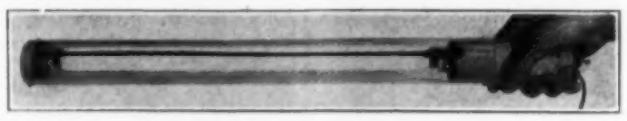
Piano wires are employed for the upper conveyor in this new adhesive spreading machine to drive a jute sheet between the glue applying rolls. A steel mesh conveyor is mounted on the underside to carry the sheet through the machine. Adhesive is applied in strip form to the top side of the jute which is used for floor pads in motor vehicles.

The machine takes material to 36 in. in width and operates at variable speed between 25 and 75 ft. per minute. Weight is about 2,800 pounds. Overall size is 54 by 38 by 55 inches.

If you write maker identify as IEN-7204

LIGHTING . . Fluorescent unit passes through a 2¼ in. opening

Source: LARRIMORE SALES CO.
P. O. Box A-1234, St. Louis 1, Mo.



Operates without heat

Tube-A-Lite is a new portable 15-watt fluorescent light. It measures 25 in. in length and is 2 in. in greatest width. It weighs 1½ pounds. The light is equipped with an extension cord and plug. A plug-in ballast is included.

If you write maker identify as IEN-7205

MOTOR . . Miniature dc., 12 to 85 volts, planetary geared head

Source: GLOBE INDUSTRIES INC.
123-27 Sunrise Place, Dayton 7, Ohio

Ball, needle bearings

New assembly of the Moto-Mite miniature dc. motor employs a planetary geared head providing 18 reduction ratios from 18.8 to 21,808 to 1. Maximum continuous torque is 1,000 oz. in. for the higher ratios. The standard design includes a mounting flange and a 5/16-in. shaft extending ½ inch. The housing measures 1¼ in. in diameter. Speed at torque rating is 1,000 rpm. for the 18.8 gear ratio. It is 0.87 rpm. for the 21,808 ratio.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-7206

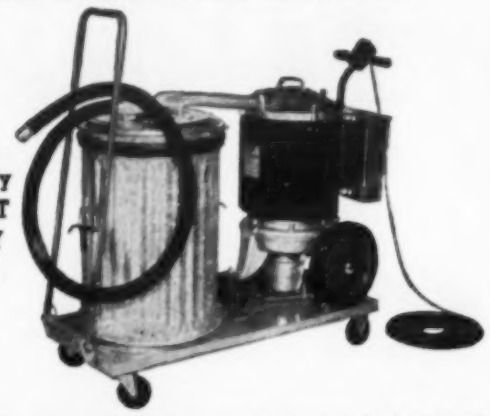
CADDY ARC WELDING ACCESSORY DIV.

ERICO PRODUCTS, INC. 2878 E. 61st PLACE • CLEVELAND 3, OHIO

If you write maker identify as IEN-7207

KENT presents a sturdy truck to carry the KENT Suction Cleaner and extra dirt receptacle

Large Capacity for WET or DRY work!



With this arrangement, large capacity is provided for both dirt or liquids. Automatic shut-off valve operates when both tanks are full of liquid . . . none can enter fans or motor! Vacuum Cleaner and 27 gallon tank are installed on truck in a jiffy and easily removed without tools, so that vacuum cleaner can be used in small areas when required.

Our 40th Year — Serving the World with Quality Equipment

Full information upon request

CLEAN WITH **KENT** EQUIPMENT

The KENT Company, Inc., 437 Canal St., Rome, N. Y.

If you write maker identify as IEN-7208

NEW COST-SAVING INFORMATION!

for —
- Architects
- Consulting Engineers
- Contractors
- Plant Engineers
- Power Engineers
- Building Managements

If you're concerned in any way with specifying, selecting, installing, operating or maintaining boilers for any kind of plant or building, you'll want this new bulletin describing the latest cost-saving features of

Powermaster®
PACKAGED AUTOMATIC BOILERS

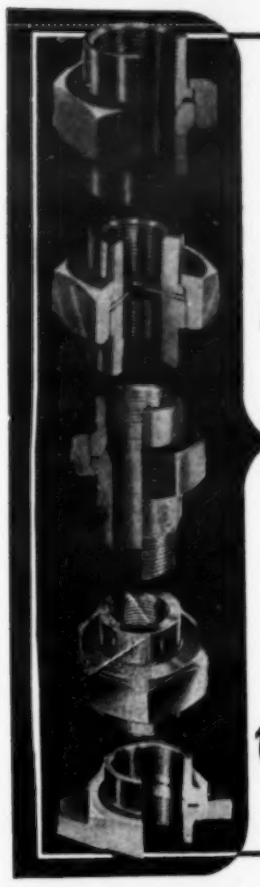
Then compare *Powermaster*, feature by feature, with any other packaged boiler and you'll see why it's today's best buy in automatic steam generation. For example, only *Powermaster* now guarantees 83% *minimum* efficiency with No. 6 oil! That means real fuel economy.

SEND FOR BULLETIN 1219 NOW...
on your company letterhead, telling us your steam requirements and operating conditions.

ORR & SEMBOWER, INC.

860 Morgantown Road, Reading, Penna.

If you write maker identify as IEN - 7210



A TYPE FOR EVERY USE!

Catawissa PERFECT SEAL Unions

for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Full Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

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STOCKED BY LEADING INDUSTRIAL DISTRIBUTORS

CATAWISSA VALVE & FITTINGS CO.
50 Mill St. • CATAWISSA, PA.

If you write maker identify as IEN - 7211

FOSTER

Chrome Sleeve Quick Detachable

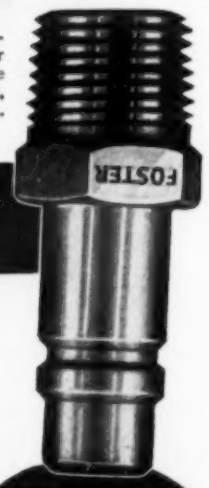
COUPLERS

AND HOSE FITTINGS

- Reusable Socket Heads for Lower Replacement Cost!
- One Second Hookup Under Pressure!
- Tight-Seal, Dirt-Proof Construction! Leak-proof!
- Instant Automatic Flow! Swivel Action!

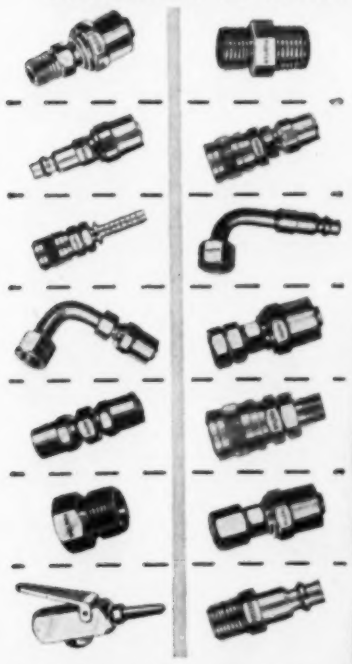
Price...Lower than most
Quality...None Better
Delivery...Immediate

Foster Quick Detachable Couplers for pneumatic and hydraulic applications give longer service and cost less than other comparable couplers. Delivery of any order, large or small, is immediate. An order to Foster is faster. Write Dept. 3.

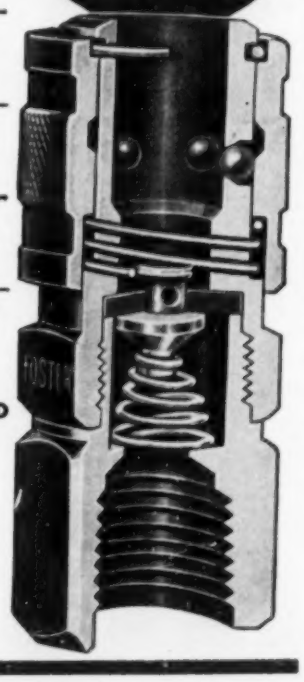


FOSTER MFG. COMPANY, INC.
2850 Gravois • St. Louis 18, Mo

FOSTER FITTINGS ARE AVAILABLE THROUGHOUT THE NATION



Send for *Free* CATALOG

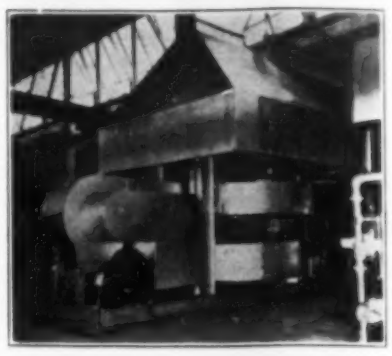


ASK US WHY WE RECOMMEND

If you write maker identify as IEN - 7213

HEAT TREATING . . Gas fired furnace with ram and work flattening plates

Source: WALTZ FURNACE CO.
1903 Symmes St., Dept. 6, Cincinnati 6, Ohio



Prevents warping

New size, mounting cast iron work plates 76 in. in diameter, has been added to the 42-in. furnace, previously described IEN-4005-53. The furnace is intended to heat treat flat work such as saw blades. It provides a temperature range between 350 and 1,000 deg. F. Semi-circular side doors take work and permit its removal.

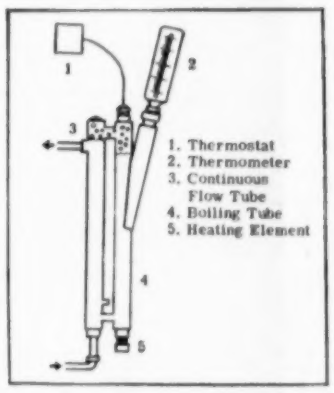
The bottom plate rests on the steel supporting structure but is not fastened to it. The top plate is suspended by a ball and socket to the bottom of a piston operating in a vertical cylinder. The plate is moved up and down by hydraulic pressure supplied from a Vickers motor-driven hydraulic unit mounted on the furnace base.

The burner fires into a combustion chamber on the inlet side of a recirculating blower, also mounted on the base. Instruments to record and control temperature are assembled on the furnace column in accessible position.

If you write maker identify as IEN - 7214

AIR CONDITIONING . . Control unit regulates relative humidity in air

Source: NIAGARA BLOWER CO.
3117 Chrysler Bldg., New York 17, N. Y.



No humidistat

New instrument regulates relative humidity in air that is being dehumidified by Niagara equipment, previously described IEN-68-53. In this equipment, **moisture** is removed from an air stream by a moisture-absorbent fluid trade-named Hygrol. The resulting mixture of Hygrol and moisture is treated continuously by heat in a concentrator to return it to its original state for recirculation. The new control governs the degree of concentration. This results in governing the ability of the Hygrol to pick up moisture and so regulates the relative humidity in the air.

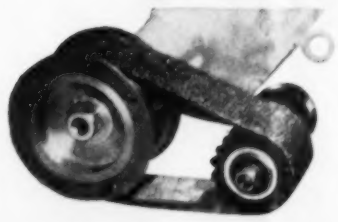
The instrument consists of a thermostat that is set to act at a predetermined boiling point, as indicated on a thermometer, in an electrically heated boiling tube located beside a continuous sampling tube for the treated Hygrol. The thermostat actuates the concentrator to maintain desired dehydrating action in the air-conditioning equipment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 7215

A PAID NEWS ADVERTISEMENT BY CARBORUNDUM CO.

PORT-A-BELT Grinding . . . Cuts finishing time 90% on aluminum castings



A finishing operation on aluminum castings, which formerly required 30 minutes per casting, is now done in 3 minutes with CARBORUNDUM's abrasive belts and "Port-A-Belt" Grinding Attachment. Ten times as many castings are finished per hour. Of course this 90% saving in time is an outstanding example of "Port-A-Belt" economy. But you may well be surprised at the savings you can make with this tool, which "brings the abrasive tool to the work."

To help you cut production time and costs, four models of the "Port-A-Belt" Attachment are available. Used with long-life abrasive belts from the complete line by CARBORUNDUM, these new grinding tools bring the versatility and economy of belt grinding to such jobs as cleaning and finishing castings, grinding small-radius die and mold areas, contours, welds, edges, etc.

All four models fit nearly all standard make horizontal-spindle portable-grinders—air or electric. They offer the high cutting rate and long belt life made possible by the serrated surface of the "61" contact Wheel. They are light, easy-to-handle—yet sturdy, with nothing to get out of adjustment.

Get full details on "Port-A-Belt" Grinding Attachments and abrasive belts from your CARBORUNDUM distributor or salesman. Or write to us at Dept. IEN 82-319.

"Carborundum" and "Port-A-Belt" are trademarks of The Carborundum Company, Niagara Falls, New York

82-319

THE CARBORUNDUM COMPANY
Niagara Falls, New York

If you write maker identify as IEN - 7216

Designers, Engineers, Plant Managers . . .

VALVAIR IS AS CLOSE TO YOU AS THESE REPRESENTATIVES

We take pleasure in offering you the services of these representatives. They are pneumatic specialists—*every one of them.* Phone the nearest one for information and expert help on your air control problems.

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Birmingham — S. L. Morrow Eng. Co.
California
Eureka — Bearings & Transmission Prod.
Pasadena — S. M. Kipp
San Francisco — The Burke Co.
Connecticut
Hartford — Gibson Eng. Co.
Georgia
Savannah — Air Products Co.
Illinois
Chicago — Walter Norris Eng. Co.
Indiana
Logansport — Tec Eng. Co.
Massachusetts
Boston — Gibson Eng. Co.
Michigan
Detroit — William Finn
Minnesota
Minneapolis — John Henry Foster Co.
Missouri
Kansas City — Ellis Akin Eng. Co.
St. Louis — John Henry Foster Co.
New York
New York City, Newark — K. E. Knotts Co.
Buffalo, Rochester, Syracuse — R. C. Neal Co.
Ohio
Cleveland — P. W. Rice
Dayton — K. C. Mosier
Oregon
Portland — Power Transmission Prod.
Pennsylvania
Glenside — J. Boyd Coates
Pittsburgh — Ralph A. Hiller Co.
Texas
Houston — Hydraquip Corp., Wendler Co.
Washington
Seattle — Chain Gear, Inc.
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Rely Upon Valvair

If you write maker identify as IEN - 7217

Here, for the first time, is a valve built for heavy duty service, yet incorporating the inherent simplicity and immediate response of the solenoid principle. Operates dependably under differential pressures to 150 lbs., temperatures to 400°—without use of auxiliary pistons or pilot valves. Finding new uses every day, handling steam, liquid, air, gases, and particularly heavy viscous liquids.

Available in sizes ½" to 3", with stainless steel valve and seat or Jenkins disc construction; for normally closed or normally open service. Find out where you can use it; write for Bulletin "V"

The Johnson Corporation

846 Wood Street • Three Rivers, Michigan

If you write maker identify as IEN - 7218

RAIN B-O-U-N-C-E-S OFF YOUR WALLS WHEN YOU USE STONHARD STONSEAL

"The Invisible Raincoat"

STONSEAL forms a lining on the microscopic pores of masonry and rain bounces off! It penetrates the surface, leaves no film, nothing to wear away. Just one application of **STONSEAL** does the trick. *"It's superdurable."* Won't discolor, acid and alkali-resistant and unaffected by salt spray. **STONSEAL** protects your walls from leaking—seals out the rain. Ideal for masonry or concrete surfaces. Send for full details today.

STONHARD COMPANY

Building Maintenance Materials Since 1922

102 Stonhard Bldg., 1306 Spring Garden St., Philadelphia 23, Pa.

Yes, I want details on STONHARD STONSEAL 102/6/53

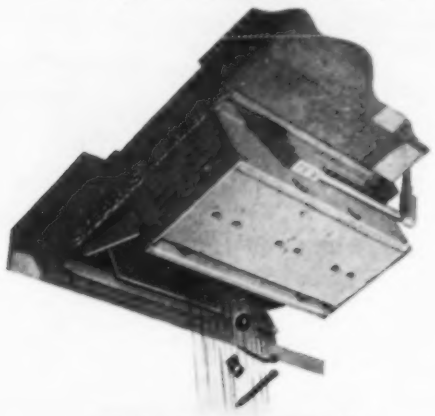
Name .....

Company ..... Title .....

Address .....

City ..... Zone ..... State .....

If you write maker identify as IEN - 7219



TRAPPED!

That tramp iron isn't going anywhere — it won't contaminate the product or get into expensive machinery and create serious damage. It has been *trapped — stopped*, effectively and efficiently with a *Stearns Electro Spout Magnet*.

IN JUST 4 HOURS OF OPERATION

Look at that pile of junk! A Stearns Electro Spout Magnet removed it from the flow of material of a leading malt company in just 4 hours! A Stearns Spout Magnet can do the same thing for you.

Write today for Stearns Electro and Permanent Spout Magnet literature and specifications.

1014

MAGNETIC EQUIPMENT FOR ALL INDUSTRY

STEARNS MAGNETS

STEARNS MAGNETIC, INC.
626 South 28th Street, Milwaukee 46, Wis.

If you write maker identify as IEN - 7220

ALL STEEL BUT— LOOK HOW LIGHT!

THIS Is one of the new A-F *Live Rail* units. It is available in 5 ft. and 10 ft. *lengths* and 45° and 90° *curves* — with 4 or 8 wheels per foot . . . or in *completely assembled sections* of 2 to 4 rails. Most versatile of all pieces of equipment, *Live Rails* can also be combined quickly — or re-combined, by anyone, to make 18 different wheel patterns 7½" wide to 16½" wide — portable or permanent. Write for FREE folder — today!

LIVE RAIL
ALVEY-FERGUSON CINCINNATI, OHIO

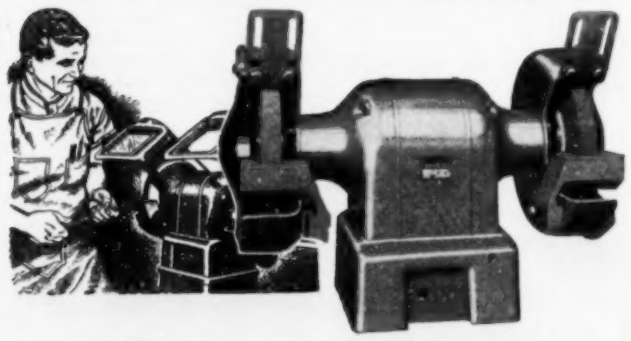
A NEW CONCEPT IN MOVEMENT

THE ALVEY-FERGUSON COMPANY
A-F First in Product Handling Since 1901
345 Disney St. Cincinnati 9, Ohio

If you write maker identify as IEN - 7221

Black & Decker Bench Grinders handle wide variety of jobs

TOWSON, MD.—Custom-powered by B&D-built constant-speed motors, Black & Decker Bench Grinders speed up job after job. They sharpen chisels, twist drills, and other tools; handle many types of grinding and metal removal; with wire-wheel brushes clean gummy or rusty parts; prepare surfaces for painting; buff and polish plated metal surfaces. Streamlined for more work clearance and less weight, B&D Bench Grinders feature adjustable U-shaped tool rests for better tool sharpening support . . . strong steel wheel guards for extra safety. Three models: 6", 8", 10" wheel diameters, ⅓ to 1 H.P. For demonstration, see your nearby B&D distributor, For free literature, write: **THE BLACK & DECKER MFG. CO.**, 608 Pennsylvania Ave., Towson 4, Maryland.



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Black & Decker
PORTABLE ELECTRIC TOOLS

"I WISH I HAD"

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

ENGINEER . . "I wish we had contact with an individual qualified to set up a plant for the manufacture of metal furniture in North Carolina. The assignment is for 4 to 8 months at present but might be permanent." **IEN W-46**

FLOW METER . . "I wish we had an instrument to measure flow of air-suspended non-ferrous metal powder moving through a 3-in. steel tube. We are in Haskell, N. J." **IEN W-47**

NEW PRODUCT . . "I wish we had contact with a manufacturer interested in taking over manufacture and sales of a small electric foot warmer to use under desks and at benches. We have made application for patent and for trademark. We are located in San Jose, Calif." **IEN W-48**

PURCHASING . . "I wish I had contact with a medium size industrial concern requiring a good buyer. I am now employed in Ohio." **IEN W-49**

SURPLUS . . "I wish we had a buyer for three No. 4 Brown & Sharpe automatic screw machines, Serial Nos. 29, 94 and 177. Also we have one Brown & Sharpe No. 6 automatic screw machine, Serial No. 77. Equipment is in Chicago." **IEN W-50**

SURPLUS . . "I wish we had a buyer for a new Dillon Model L universal tester with 5,000 lb. dynamometer and steel stand complete with Type AA grips. It is in storage in its original carton in Kansas City, Mo." **IEN W-51**

SURPLUS . . "I wish we had a buyer for all or a part of 600 lb. of finely ground foam rubber that we have in storage in Chicago. We will send a sample upon request." **IEN W-52**

SURPLUS . . "I wish we had a buyer for a quantity, totaling 100,000 lb., of steel plate measuring 50 in. in diameter by 2¼ in. in thickness. All or any part is available as is or can be flame cut to specified shape or size. The steel is in Milwaukee." **IEN W-53**

TAX FACTS

PERSONAL INCOME OF AMERICANS HAS MORE THAN TRIPLED SINCE 1939...

BUT...

UNCLE SAM'S TAX TAKE IS 21 TIMES WHAT IT WAS IN 1939

Produced as a public service by the Chamber of Commerce of the United States

If you write maker identify as IEN - 7222

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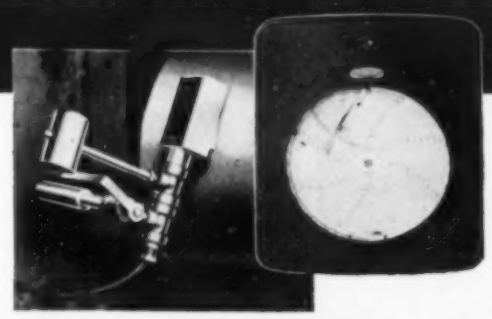
"Hy-V" Air Jets
DeBOTHEZAT FANS DIVISION
American Machine and Metals, Inc.
East Moline, Illinois

If you write maker identify as IEN - 7223

NOW! CONTINUOUS MEASUREMENT OF ROLL SURFACE TEMPERATURES



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The system consists of an *entirely new type* of measuring head . . . plus a Dynalog *Electronic Recorder or Controller. Minimizes ambient or radiant temperature errors. No scoring of the roll. Operating range: —40°F to +350°F, higher under special conditions.

Write for Bulletin 405.

The Foxboro Company, 426 Neponset Avenue, Foxboro, Mass., U. S. A.

*Reg. U. S. Pat. Off.

FOXBORO Reg. U. S. Pat. Off. INSTRUMENTATION RECORDING • CONTROLLING INDICATING

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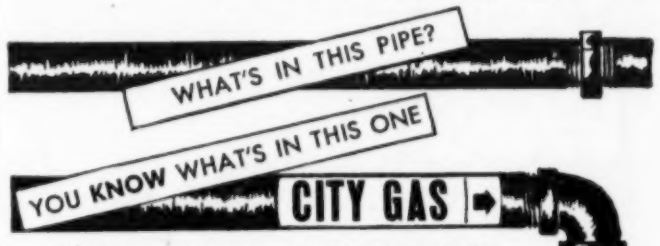

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Identify every pipe in your plant quickly and inexpensively with Brady Pipe Markers. They give you a uniform system of identification based on ASA Standard A13. Anyone can apply and everyone can identify the pipe contents and direction of flow. Cut maintenance time. Make your plant a safer place to work. Over 235 different markers in stock. Specials made to order. QUIK-LABELS come on handy dispenser cards. They are printed in large black letters on approved ASA background colors. Applied in a jiffy — they stick without moistening. Use indoors or outdoors. Cost only a few cents per marker.

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MANUFACTURERS OF SELF-STICKING PRODUCTS

W.H. BRADY COMPANY

734 W. GLENDALE AVE., MILWAUKEE 12, WIS.

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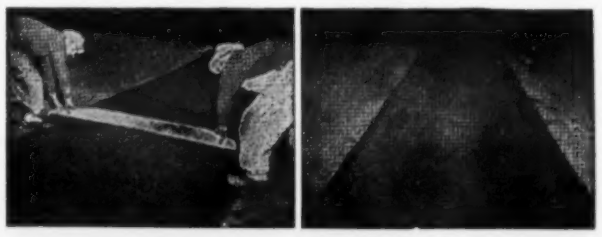
NEW FLOORS IN 24 HOURS

FLOORS LAID TODAY • READY FOR USE IN 24 HOURS



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